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Editorial Notes

THE reluctance of primitive man to reveal his name is well known and is attributed to his belief that by so doing he surrenders a weapon that may be turned against him by evil magic. Perhaps that reluctance is not yet quite extinct; what logical reason is there for the dislike one has of revealing the intimate details demanded by the Passport Office? No respectable citizen need hesitate to set them down in writing, for, with the possible exception of those mysterious Special Peculiarities, they must be self-evident. Yet hesitation there often is. Is this reluctance counter-balanced, in either case, by a corresponding sense of triumph at the receiving end—a now-we've-got-him feeling? That certainly follows in zoos and museums when one reads the name on the label. It may be a primitive trait, but—let us be frank—are not we all rather unhappy unless told the animal's name, preferably in English, and its address; and when we have read it do we not have an absurd feeling of satisfaction? Perhaps it is to satisfy that crude yearning that some museum labels are but glimpses of the obvious, rejoicing to inform one that one is beholding, say an amphora of white terracotta. One had perhaps suspected that it was, but now reassuring to be told so!

The historical student is apt to be a willing victim of this name-magic. He will pore and puzzle over lists of place-names recorded, usually without any clues, in some ancient document. And when, as sometimes happens, he can identify one or two such with a known ancient site whose ruins are still visible, he sits back with just that sense of elation that the visitors to the zoo experienced. He has fitted one more piece of the jig-saw puzzle, added a brick to the temple of useless knowledge; he knows the city's name. He is as proud as if he had solved a cross-word problem. And is there any more justification for his pride? There surely is, for without identified place-names history is unintelligible; if the contemporary names cannot be used, the modern ones must take their place. (But this latter procedure is anachronistic, and to be adopted only in case of necessity).

The publication of Period Maps was initiated between the wars by the Ordnance Survey. The term was used because it covered both historic and also prehistoric periods. The series was a success, and one at least of the maps (Roman Britain) went a long way towards paying for itself, and the latest—that of Monastic Britain—is, we understand, well on the way to doing so too. The lead thus given was followed by Palestine, which

has produced two excellent maps covering the Crusades and the Roman period. Closely connected with the Ordnance Survey venture was the International Map of the Roman Empire, now sponsored by the Society of Antiquaries of London, which is preparing a map of Roman Libya. The base-map is the International Map of the World on a scale of 1 : 1,000,000 (16 miles to the inch), which is admirably adapted for the purpose. It provides a great opportunity for an extension of the idea of Period Maps to cover the Ancient East. We now know the contemporary names of a large number of ancient cities in the ancient home of civilization, from Troy to the Persian Gulf and from Nineveh to Thebes. There is a considerable literature, archaeological and historical, and many students in every country. But the intelligent reader who is not a specialist is handicapped by the absence of any authoritative general maps on the area. Many of the books have index-maps of sites, often of poor quality and in the barest outline only.

The Fertile Crescent, which consists of Mesopotamia and Egypt, linked by Palestine and Syria, is completely covered by seven maps of the International Map of which Cairo (H 36), Damascus (I 37), Baghdad (I 38) and Basra (H 38) are the principal ones. It would be easy for specialists to compile maps showing all the chief known ancient sites and regional names on these sheets, giving both ancient and modern forms. Not every ancient mound need be shown, but only a selection ; those which have been excavated would naturally be given priority. Why has this not been done ? Probably because there is no individual or body to take charge and organize. The specialists have their own work to do, but could surely find time to compile the models. These do not call for draughtsmanship and their compilation (as distinct from the identification of ancient names with modern sites) is perhaps the easiest part of the job. It is the organization, fair drawing and the seeing through the press that takes time and labour ; and that, apart from proof-correction, is not the job of an orientalist, but of some member of the organizing body. There would be no insuperable difficulty in carrying out such a project if it were adequately financed, and it would need far less money than some more ambitious but less useful undertakings. The organization would be entrusted to a committee responsible to a recognized authority. International direction is necessary because no less than eight sovereign nations are concerned, most of them without the experience and technical equipment required to produce the maps. For these reasons printing would best be done in Europe or America.

The usual objection made by specialists is that many of the ancient geographical names either cannot be identified or are controversial. That is no reason for not showing those—and they are also many—which are certain, and those—Jarmo and Hassuna for instance—which are already famous but otherwise unnamed and unlikely ever to be so. This hesitation is natural but fatal to progress ; the best is always the enemy of the good. When the first edition of the map of Roman Britain appeared, there were still many names that had to be omitted ; it was no more than a cartographic statement of what was then known. It set a certain standard by eliminating commonly accepted but erroneous identifications, which as a direct result have now been dropped. Its influence has been thoroughly beneficial, and its own errors and omissions have been rectified on subsequent editions. To wait for perfection is merely an excuse for doing nothing ; perfection is unattainable in these matters. Publication is itself a stimulus encouraging research from which specialists themselves, as well as the interested amateur, will benefit.

Cupola Tombs in the Aegean and in Iberia: a criticism of a recent theory

by Sir John Myres

I

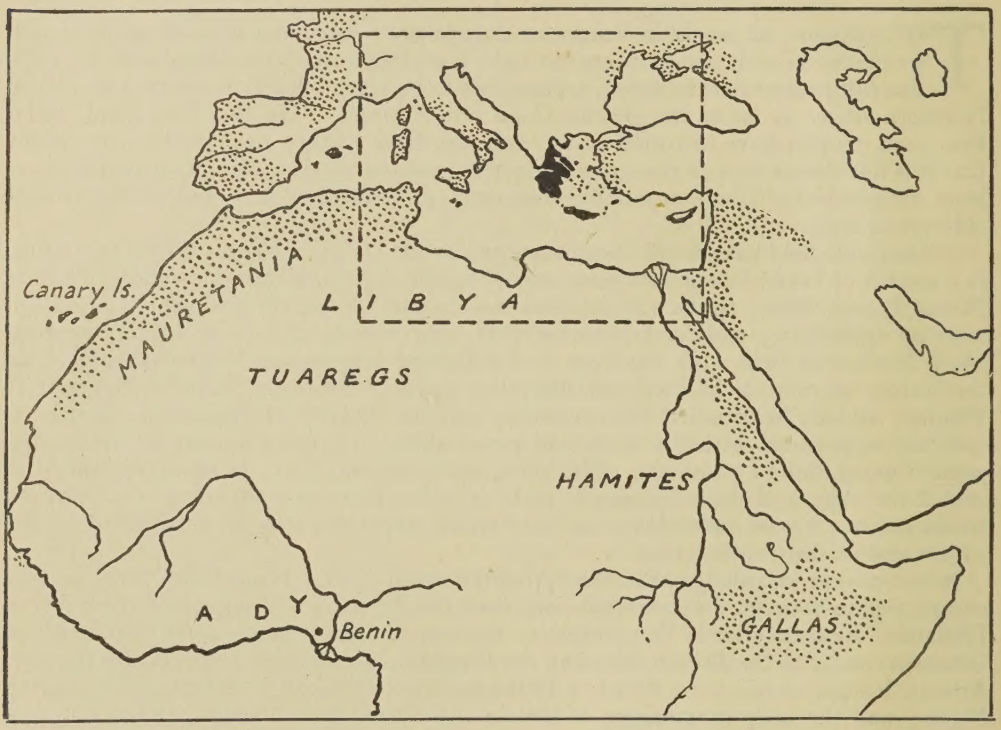
THE religions of pre-Indo-European Europe are a large and difficult subject; but a sufficiently wide survey turns out to be less complicated than might seem possible. For full perspective, however, account has to be taken both of Western Asia and of Northern Africa as far as the Guinea Coast and Ethiopia. On the other hand, Indo-European peoples have intruded so far, and also have in turn been overlaid so deeply that it is not always easy to recognize Indo-European survivals at all; wide regions have been stripped—by Islam especially—not only of Indo-European but of the earlier cultures as well.

This wide field has recently been surveyed by Dr Dominic Joseph Wölfel of Vienna, in a section of Franz König's encyclopaedic *Christus und die Religioner der Erde* (Thomas Morus Presse, Wien, 1952). It deserves mention in Antiquity because its argument rests on archaeology and folklore rather than on confessional or even literary sources. Dr Wölfel's own field-work has been in the Canary Islands and Western Sahara. In the history of religion he confesses himself a pupil of Professor Wilhelm Schmidt of Vienna; and he has studied the researches and the theories of Frobenius. But he is critically acquainted with the work and personalities of many pioneers as well as the present generation of enquirers. His book, and even his idiom, is not easy, and it is one of the objects of this summary to make it rather more easy for those who have to encounter it. For it maintains some bold views which can only be established by the widest and closest consideration.

It is common knowledge that the 'Mediterranean' and 'Near East' form a large natural region between the mountain-zone from the Pyrenees to Zagros, and the Saharan Flatland. Less familiar is the continuity between the coast-lands north and south of Gibraltar, as far as the British Isles and the Canaries, and in some respects also beyond. Atlantic Europe as far as the Rhine and Elbe has its counterpart in Atlantic Africa to the Niger; and the early monuments of Britain and Scandinavia, likewise, in the Canaries and the Gambia, where early cultures are undefaced by Indo-European intrusion or even in some parts by Islam.

Surveys of prehistoric cultures have usually begun with the Nile and Euphrates and followed the course of civilisation westward. But that has the drawback that west of Greece and Italy, the Celts and the Germans, the order has to be reversed, to take account of the Iberian peninsula and the North-west; North Africa is usually omitted, and the 'rude stone monuments' of Palestine and Syria are treated, if at all, quite out of connection with the 'megalithic' West. Dr Wölfel's plan is different. He begins with the vast series of 'megalithic' monuments in Atlantic Europe, certainly very ancient and some of them very primitive; and he traces this culture to what he suggests is its origin, as well as its culmination, in Southern Spain. He discusses the purpose of the principal types of monument, the forms of burial which they subserve, and their funerary and votive equipment; the exchange of rarities with other regions, and the acquisition of metals by an originally neolithic industry. He has no difficulty in establishing uniform

observance of the dead ; but for other cult and ritual he has to infer from peoples who have had in other respects a ' megalithic inheritance '. Votive representations of men and animals do not, for him, presume polytheistic deities ; and this absence of ' gods ' he supports by ancient testimony about the Gallaeci and Celtiberians, and consequent observance of a monotheistic ' high god ' like that of the Iberians in St. Augustine[1], and of the Canaries after the Spanish discoveries. In amplifying this outline Dr Wölfel is handicapped by his deep distrust of inferences from pot-fabrics to the movements



DISTRIBUTION OF 'MEGALITHIC' AND KINDRED CULTURES
according to Dr Dominic Wölfel. *Wien* 1952

of peoples (pp. 230–5) ; but he admits the technical connexion of the wide-spread ' beaker-ware ' with Iberian and other fabrics which seem to be indigenous ; with the reservation, however, that clay fabrics imitated from basketry *may* originate wherever basketwork occurs, as it does very widely in Saharan Africa as well as in Atlantic Europe. He rightly associates with neolithic implement-fabrics the characteristic ' megalithic ' grinding and polishing—sometimes quite advanced—of stone blocks, and the absence of the sawing and chisel-dressing of Egyptian and Aegean masonry. On this distinction between ' megalithic ' and chisel-dressed stonework he has to insist as the argument proceeds.

[1] *De Civ. Dei*, VIII–IX.

Within the Western basin of the Mediterranean, the Balearic Islands, Sardinia (with Corsica), Sicily and Malta (with Gozo) had rich and mature ' megalithic ' cultures, with settlements and industries approximately dated by their borrowings from the Minoan culture of the Aegean. Less coherent and well-dated are monuments in Etruria, and in South Italy bordering the Adriatic and the Eastern basin of the Mediterranean, with similarly slight traces of Aegean intercourse. What is remarkable is that the crowded and highly developed outposts of Malta lie at the extreme eastern margin of the whole west-megalithic region, as well as at the junction between its wide African province and its north-eastern margins in Sicily, Tyrrhenia and Sardinia. Did the ' megalithic ' world just *end* eastwards like that, and if so why ?

II

It is not the purpose of this essay to examine Dr Wölfel's history of early western religion at large, but to challenge the archaeological basis of his reconstruction of the relations between the Western and Eastern basins of the Mediterranean, and especially in the Minoan and Mycenaean phases of the Aegean culture.

It will, however, state Dr Wölfel's thesis even more clearly than he presents it himself, if certain sections of his essay are summarized at this stage, before rather than after this mid-Mediterranean question.

The general theory of religious development—to which his analysis of observations over the whole region is subsidiary—is essentially that accepted from Andrew Lang and elaborated by Wilhelm Schmidt of Vienna and L. von Schröder (p. 322). The main thesis may be summarized as follows :—

Many primitive and ancient peoples worship a ' Supreme Being ' who maintains (and in some instances creates) the material world ; he often intervenes, through a thunder-god or other natural force, he may be the ' father ' of mankind, and of sundry personal gods. As ' sun-god ' he may have a moon-consort ; as ' sky-god ' an earth-consort ; and other functional deputies. Such ' Supreme Beings ' are recorded in antiquity for some west-European peoples, associated only with ancestor-worship and tomb-cults. They are to be distinguished from the ' All-Fathers ', ' Thunder-gods ' and the like by their lack of specific functions or local associations ; but may be presumed to have been merged in the polytheisms of Indo-European peoples, and in the regional ' Supreme Beings ' of western sects of Islam. Throughout negro Africa such a 'Supreme Being ' is ubiquitous, more or less obliterated by ancestor-worship and other functional cults. Throughout Eurafrica north of this, from the Canaries northward, a similar combination is presumed to be attested by ' megalithic ' monuments and certain ancient records of west-European peoples.

Among many peoples also, natural occurrences are attributed to impersonal forces which may occupy and activate natural objects, and can be influenced by human efforts. Such beings are *daemons*, and a system of beliefs in which these notions predominate is *polydaemonism*. Though *daemons* may be provoked or placated by man, they have no individual personality or permanent coherence.

In *polytheism*, thirdly, there are fully personal *gods*, immortal and ubiquitous, in human form, but associated with natural regions, forces and processes, which they control as *daemons* do. They are affected by love and hatred for men, and for each other ; they have moreover a general regard for right and goodness. Thus the *gods* form a loose society or family under the dominion of a divine king, often identified with the ' Supreme Being ' (as above), or as proceeding from him ; but sometimes with the parvenu or malevolent ' trickster ' or with the violent ' thunder-god '. *Gods* have their

abodes, and favoured places and seasons at which they can be placated by votaries and by communities of men. Some become patrons of one or more cities whose inhabitants may be regarded as in some sense their offspring. A *god* thus combines the attributes of a hero (as below) who has a human biography and associates, and a *daemon* who exists only in some locality or activity of nature. Rarely this transition may be traced; Asclepius, for instance, is a living *hero* in Homer, but by the 6th century he is a *god* with shrines at Epidaurus and Cos; he becomes deliberately established at Athens in the 5th century, and at Pergamum in the 4th.

Between polytheistic *gods* and the human ancestors of families and tribes is a very large group of *heroes* or 'protectors'—in early Greek a feminine counterpart of *hero* seems to be *Hera*. These were men of old time and good fame, worshipped and tended by descendants and neighbours for human qualities and achievements embodied in a local *myth*. They haunt their tombs and shrines, lodge in caves, rocks, mounds and groves, and may appear as certain animals or birds. Some of them are promoted into polytheistic godhead, as 'sons' of the 'All-Father'; others have local and social functions like the ploughing-hero Echetlus, who appeared at Marathon with Athena, Heracles and Theseus. Many classical *heroes* have become Christian *saints* in Greek lands; many *saints* in the West are the canonized *heroes* associated with megalithic sites.

Such is the theological clue with which Dr Wölfel claims to thread the labyrinth of pre-Indo-European cults and monuments; and it may be admitted that it has taken him a long way. Very impressive is his analysis of the principal West African systems in which he finds analogous 'Supreme Beings' more and more superseded by functional deities, tribal heroes, polytheistic gods and naturalist daemons, while the aboriginal ancestor-cults persist, with similar rituals; while in Central and Western Europe similar cults of a 'Supreme Being' and of aboriginal ancestors have been overlaid and disorganized by Indo-European intruders from East-central Europe. What elements the intruders introduced as their own heritage Dr Wölfel does not very clearly reveal, and in two passages he almost gives up the quest (pp. 360, 363), though he suggests that at least they propagated cremation. Here the principal difficulty is to explain how the 'father of gods and men', who alone among Indo-European gods has a name meaning 'heaven', is also head of the 'un-ethical' Olympian society, is a 'hero trickster', and is a son of a Heaven-god who had an Earth-consort, and himself had displaced a 'Supreme Being'. Clearly among Indo-European beliefs, as we know them most uncontaminated, there is already some admixture with notions themselves 'megalithic'. This, however, does not affect the mid-Mediterranean problem.

III

The other section of Dr Wölfel's argument, which converges on the mid-Mediterranean, concerns the eastern region of Megalithic culture and monuments, beyond the Eastern Mediterranean. Here, from Syria through Palestine into Arabia, and widely further east, enveloping Mesopotamia, and also Egypt, with a large extension into Ethiopia, there is a multitude of megalithic monuments with remarkable resemblances to those of the West, associated with very ancient cults of a 'Supreme Being' and of tribal ancestors, and with only slight and superficial occurrences of 'polytheistic' deities, for example in the special circumstances of the populous cities of Mesopotamia, with their separate urban patron-gods. Those centres are exceptional in other ways also, such as their early acquaintance with metallurgy which they seem to have acquired from the Mountain Zone (p. 363). More significant for the earliest periods are the Syrian sites where hard basalt has conserved the framework of a whole civilization with irrigation

and fruit culture—and Gezer, among the Palestinian cities, which is deeply entrenched in limestone (p. 367). In Syria cupola-architecture survives copiously today; and at El Adeimah the early pottery resembles Iberian. In historic times, 'soul-abodes'—in wood-pillars and trees—supplement the standing stones taken over by Canaanite immigrants from aborigines. The Semitic name Ab-raham is 'Father of a Cairn'.

The connexion between Syrian and Iberian megaliths is here left vague, Arabia being so ill-explored; but it is noted that 'megalithic' stonework in general presumes wood-work, and therefore both great antiquity and the material for ship-building. The very early occupation of Cyprus is significant—with one notable 'rude stone monument' near Larnaca, and cupola buildings in its neolithic culture.

There is no need to elaborate here the 'megalithic heritage' of Egypt, where polytheism only comes in gradually, under the earliest dynasties, in peculiar circumstances and with hero-cults (p. 392). Much has probably been buried under Nile-silt, but there is a *dolmen* at Hierakonpolis, circles, tumuli and primitive graves along the desert margins. Primitive Egypt had a 'Supreme Being' in Heaven, but Heaven and Earth were a divine pair. Besides the later regional gods, who have ethical functions, do justice, and 'live in their statues', there are heroes who have been powerful men, like Menes. Later, Amon-Ra had been a Libyan sky-god. Neolithic conditions persisted long, but metallurgy and chisel-dressed masonry came in with the earliest dynasties.

It should be noted that eastern Libya remained a populous and powerful neighbour to Egypt till historic times; also that it had the advantage of a steady eastward coastal current past the Nile delta and up the Syrian coast, returning westward south of Anatolia and Crete.

Saharan Africa, Barbary and Morocco, like Arabia, have been so over-run by Islam that it would not be surprising if there were but few traces of polytheism. It is also not easy to specify survivals of pre-Islamic monotheism. The archaeological record is therefore the more impressive, in spite of severe wind-denudation; there are many megalithic monuments of various typical forms comparable with the Palestinian, with local cults certainly not Moslem; channels and bowls for water conservation and ritual; inscriptions, some comparable with Iberian and Minoan, with the linear Tefinag script still in use along trade-routes; and many popular observances like those of the Canaries and Western Europe as far as Ireland.

On the other hand, though there are many tribal *heroes*, with local sanctuaries, there is little trace of polytheism, even in dissolution. The Mediterranean cultures have had very slight influence, and even Egyptian resemblances are few and disputed.

In strong geographical contrast with the Mauretanian coast, the low treacherous coast of most of Libya, and the eastward shore-current already noted above, repel and direct sea-traffic out of the Aegean. Further west, however, it is possible that the still surviving Kabyle pottery may be derived from the earliest copper age fabric of Sicily and Malta.

IV

In view of these and other aspects of Dr Wölfel's enquiries, it is his use of theological criteria, to establish a 'megalithic heritage', that gives significance to his treatment of Aegean culture, which lies in mid-Mediterranean, between outposts of European 'megalithic' in Sardinia, Sicily and Malta, and the western margin of the 'megalithic' Syria and Palestine.

It is common knowledge that the specifically Minoan culture of the early Bronze Age succeeded rather abruptly to a long Neolithic Age, represented at Knossos by about

7 metres of town-debris ; but this earlier culture has not yet been fully studied. It certainly belongs, however, to a widespread type represented on sites and in tombs in Crete, the Cyclades and mainland Greece, on the coast of Syria, Asia Minor, the west coast of Greece, south Italy and Sicily, and introduced into Egypt from the Libyan Desert during a short period of the predynastic age, which gives an approximate date. Its industries are neolithic, but copper is not quite unknown.

Characteristic material techniques link the earliest Minoan culture with early industries in Western Asia Minor from Lycia to the Troad and far into the interior ; pottery with globular bodies, trough-spouts and prominent loop-handles ; there is incised basketry ornament, occasionally filled with white, and there are small clay figurines of women. Rather later the clay is fired red, and many pots have a burnished red slip.

There are, however, both in Crete and in the Islands, settlements more closely related to those of neolithic Sicily and Syria than to anything Anatolian.

Without serious interruption, Minoan culture spreads from Crete to the Cycladic islands, and to the gulf-heads of Mainland Greece, as far north as Euboea. It has not been traced on the shores of Anatolia, but there are contacts with Cyprus and with North Syria at Alalakh and Ras Shamra where there are similar fabrics of polychrome pottery.

Though there are many representations of natural objects, painted, modelled in clay, and engraved on seal-stones, there are but two human figures which can be claimed as representing anything but a votary : many figures of men, women, domestic and wild animals in a hill-top sanctuary at Petsofà ; others in cave-sanctuaries at Psychro, Arkalokhori and elsewhere. Burials are in caves or small stone-lined cists, with secondary ossuaries—a ritual which survives in modern Greece. Some ossuaries are large, with circular wall and cupola probably of timber : others, smaller, seem to have had false-vaulted domes, but their age has been disputed. In the Islands rude cupola-tombs with side-entrance clearly develop independently among slab-roofed cist-graves on sloping sites, before the expansion to the mainland. One large circular building in the lower strata of Tiryns may have had a cupola, but was devastated early. The only counterpart is an irregular oval house at Chamaëzi in Crete, of very early date. There is nothing here that cannot be matched in Malta, Sicily or Sardinia : no need of a ' conquest ' to introduce ' megalithic ' ideas.

North and inland of the mainland settlements the neolithic and earliest copper-using cultures, which vary, are all derived from those of southeastern Europe or western Anatolia, except perhaps the painted-ware culture of Thessaly, which has been attributed to immigrants either from the Ukraine or more probably from North Syria or Cyprus.

None concern the present problem except the ' Minyan ' grey-ware, which originates in Boeotia and spreads aggressively into Thessaly and Macedon, into the southern mainland, and locally to the west coast. This has been attributed to intrusion from northwest Anatolia, but a contrary drift has been suspected by some.

With the ' Minyan ' expansion in the south about 1700 B.C. begins a rapid divergence between Cretan and Mainland (Mycenaean), emphasized by a widespread earthquake and devastation of the Cretan ' palaces ' about 1600 B.C., and a second earthquake and conflagration in the rebuilt ' palace ' of Knossos about 1400 ; followed by rapid expansion and development of the Mainland, while Minoan Crete fell into decline.

V

This long stay Dr Wölfel simplifies overmuch. His interest is explicitly in the light which he thinks it throws on an eastward expansion of the West Mediterranean culture ; or rather on what such an expansion contributed to the course of events in the Aegean.

So he minimizes the ' megalithic inheritance ' of the whole Aegean. On the other hand he regards the great stone-built cupola-tombs (*tholoi*) characteristic of the Mainland Sites at Mycenae, Orchomenos, Vapheio and elsewhere as the monuments of predatory invaders from the West Mediterranean, to whom he ascribes also : (1) the fortified strongholds of Mycenae itself, Tiryns, the acropolis of Athens, and many smaller castles on the Mainland (2) the rupture between the Mainland and Crete, the domination of Crete by Mainlanders about 1400 B.C. and the destruction of the Palace of Knossos (3) the expansion of the Mainland (Late Helladic) type of culture eastward to Rhodes, Cyprus and the coast of Syria and Palestine, and northwards, later towards the Hellespont (4) the establishment first of friendly or tributary relations with Egypt (1370–1300 B.C.), later (1230–1180) of the hostile and predatory regime of the Sea Raiders ; though Dr Wölfel seems also to attribute the Sea Raiders and the contemporary Land Raiders in Anatolia and Syria not to Western but to Northern (probably Indo-European) intruders.

To this bold reconstruction there are several obstacles. 1. Though the design of the Aegean *tholoi* closely resembles that of same of the finest and most elaborate cupola-Tombs of Southern Iberia, the stonework is always chisel-dressed (and sometimes saw-cut) as in the Cretan palaces : this Dr Wölfel explains by the employment of native masons under western architects brought in by the invaders (p. 280) ; though it is strange that there was no propagation of Aegean craftsmanship into the West. 2. The cupola-design is not so exclusively of western origin as Dr Wölfel supposes. Evans attributed it to very early Libyan intercourse, and though there has been dispute as to the earlier Cretan examples—and some of the earliest and largest of these were probably roofed in wood—there is no doubt that some of the stone-roofed cupolas of Crete are Middle Minoan and certainly earlier than the Mainland *tholoi* ; and the more Wace and others insist on late dates for these, the greater is the priority of the Cretan dates.

3. Though the varied contents of the early graves at Mycenae have long been thought to be the loot from wide-ranging raids, the most opulent were not found in *tholoi* but in stone-lined ' shaft-graves ' of indigenous type. But there is also no evidence of such traffic of Aegean products westward as must have resulted from copious military intercourse. 4. On the other hand, if there *were* indigenous *tholoi* in Crete—of whatever ultimate origin, and all the more so if Libyan—the chief argument disappears for late and violent introduction from the West. The marked changes of material culture about the time of the first Mainland *tholoi* are sufficiently attributed to the spread of the so-called ' Minyan ' (grey-ware) technique which certainly came from Central Greece, if not from further north, not from the West Mediterranean. 5. The close resemblances between Aegean and Iberian cupolas have been attributed to either end, in the absence of other indications of priority. The Aegean *tholoi* are approximately dated between 1500 and 1350 B.C. ; the Iberian are not dated at all. Whereas there is no legend or other evidence of western aggression, there is a well-known tradition of a great westward expedition of the Cretan king Minos, assigned by Dr Wölfel himself to about 1360 B.C.—by others rather earlier—in which Minos perished and most of his force : his tomb was shown later in Sicily.

6. The great Sea Raids of 1225–1190 B.C., which fell upon the coasts of Egypt and Palestine from the West, included tribes with names like Shakalsha, Sardana and Tyrsha, which resemble Sicily, Sardinia and Tyrrhenia. But if they came from so far west—and were not indeed dispersed *thither* after the Raids on Egypt, as some believe—they are far too late for any direct connexion with the builders of the Aegean *tholoi*, and stand at the beginning of a new disturbed period marked by emigrations, not from the West but from the Aegean and especially from its Anatolian shore, of which the most

conspicuous results were the fortified cities of historical Etruria, and the earliest Hellenic cities of Magna Graecia and Campania ; accompanied by imports—at first rare, afterwards copious—of Greek pot-fabrics, ivories and bronzes from the new Hellenic cities of the Aegean. There is no room here for any such western impact as Dr Wölfel supposes ; and his own chronology puts it much earlier and limits its scope to the Western Aegean. He makes no mention of the West-Anatolian *tholoi*.

Returning from this side-track of the cupola-tombs, it is sufficient to note (to supplement the traces of early monuments common to Crete and Libya), how faint are the traces in early Aegean culture of personal deities. Most of the figurines, male or female, in sanctuaries or on seal-stones, seem to be votaries, attending a tomb or hero-sanctuary. Single armed or dancing figures, high in air, may be either heroes or ancestors. There are one or two representations of sun and moon, in scenes of worship, but they are not central, or adored, like the trees or birds which are embodiments of natural forces. While there are few traces of temples or abodes of personal gods, ancestor-worship and the belief in soul-survival are demonstrated by splendid tombs and ornate ritual. Daemonism is ubiquitous, in the respect paid, as above, to living plants and animals, and the vivid naturalism of decorative art. Votaries or priestesses are shown ' possessed ' by snake, bird or cat, and exercise the ' functions ' of spear or shield. Rarely men carry axe or shield or an animal mask. But there are no temples ; at most there are palace-shrines or town-shrines with a ' numinous ' protector ; and there is one woman, on a sealstone, standing on a hill or cairn and attended by lions, the supreme embodiment of natural force. The great gold ring from Mycenae, so far from being Nilsson's ' pantheon', need not present anyone but votaries or priestesses attending a tree : the little figure in the sky is just an armed ' hero '. A stately personal ornament, in gold, from Mycenae combines a woman with birds, palmettes, and what may be snakes in the formal group : the Anatolian cult of a ' Great Goddess ' was certainly beginning to be known.

Characteristic representations are of dances and other physical exercises, such as the famous bull-sports—certainly ritual manifestations of natural forces and functions. Apart from a few rude and lewd seal-stones there is little erotic allusion. In the bull-game girls join or replace the men, and the crowds include both men and women. Among these many impersonal and functional symbols, the nearest approach to personal deities or even heroes is the women attended by lions (see above), the corpse or mummy before a tomb-shrine on the sarcophagus from Agia Triada, the chariot-driver on the same—both probably the deceased or a *hero*—and a few small hovering figures, either male or female, which also may be human ancestors. The contrast with the ubiquitous personal deities great and small, merging in heroes and nature-powers, which are characteristic of Greek religion, could hardly be more complete on either side of Nilsson's abrupt ' black band ' across the scene, after the Minoan Mycenaean collapse about 1250 B.C.

There was indeed no need for Dr Wölfel to propound ' cupola '-tombs, or their immigrant makers. The Bronze Age culture of the Aegean is fundamentally as ' megalithic ' as primitive contact with Sicily and Libya could make it. It was already in slight peaceful contact—importing a rare obsidian to work into toilet-vessels—as early as the first *tholoi* at Mycenae, and such contact continued till the close of the Bronze Age. But it was not from the West—nor from the ' megalithic ' East in Syria and Palestine—that the Aegean derived its ingenuous and explicit devotion to manifestations of life-force, whether in plants, birds and animals, or in other men, or its genius for expressing it in works of art.

After the ' black band ' which divides the Late Minoan world from the Hellenic, the position by general agreement is as follows. The Hellenic polytheistic personal gods

are recently established, with their mainly urban sanctuaries, but also in some shrines with Minoan antecedents, in a world crowded with local abodes of heroes and minor deities, and with believers in impersonal nature-powers (*daemons*) approached by ritual and magic. The personal Olympian gods formed a loose family group, dominated by the father-god Zeus, who was also sky-god and thunder-god, and husband of a powerful goddess Hera, whose name seems to be the same word as *hero*. Zeus and the Olympians had displaced two similar dynasties, the first of which was the realm of a sky-god, Ouranos, husband of Earth. Their home was in some sense in the sky, or in the Thessalian mountain Olympus. But every greater god, and probably all, had a local abode, and usually protected one or more of the new fortified cities which emerged from the Dark Age. Early in the Hellenic Age there was a deliberate classification of this polytheism by its myths; and the relation between gods and men were illustrated by epics

LATE MINOAN FROM RHODES
Brit. Mus. Cat., Vases I, 1, A828

PROTO-GEOMETRIC FROM ATTICA:
Desborough, *Protogeometric Pottery*, pl. 13: 599 (T.28)

of a heroic age just before the collapse of the old world. In this sense 'Homer and Hesiod made for the Greeks their gods', but the process was continuous in classical antiquity.

As the Greek occupation of the Aegean world spread, local abodes of nature-powers or old tribal heroes were assigned to Olympian gods; Olympia in the west to Zeus, with a myth of his father Kronos; Corinth to Poseidon, earth-shaker and sea-lord; Eleusis to Demeter; Athens to Athena, perhaps herself an older 'town-protector'; Delos, Delphi and other oracular sites to Apollo who may have been himself, like Aphrodite, an Anatolian deity; and the mythical alliances of Zeus with local heroines are the counterpart of the same process of acclimatization.

Outside the Aegean, as colonization spread, the same continued. Apollo and Aphrodite were detected in Cyprus, Athene in the Delta, Poseidon in Libya, Demeter in Sicily, Zeus and others in Latium and other Italian regions, and in Etruria, with greater variety of attribute and ritual.

To these conventional explanations Dr Wölfel's account of the 'megalithic' religion of the West gives coherence and greater precision. It is only in regard to the pre-Hellenic cults of the Aegean that his misapprehension of the relations between East and West has distorted the picture. Such misapprehension it is the purpose of this essay to remove.

Publication

by the EDITOR

PITT-RIVERS said that the date of a new discovery is the date of its publication, thus attributing equal importance to each. Students learning archaeology are taught how to excavate—and nowadays they are, as a rule, very well taught; but nowhere, it seems, are they given any instruction in the practical details of writing an excavation report or an article such as those published in ANTIQUITY or in the *Proceedings* of archaeological societies. The following remarks are intended to call attention to this lacuna in the hope that it will be filled. Those who take courses in archaeology at the Universities will eventually—and often quite quickly—be directing excavations and writing or editing reports, articles, books and journals themselves. These are technical matters that need to be learnt just as much as the technique of excavation. Crowded though the syllabus may already be with purely archaeological matters, room should surely be made for instruction in the presentation of results.

So far as the text is concerned few general rules can be laid down. The prime requirement is to think out a plan, state the facts clearly and concisely and then get it typed out well. If there are many corrections to the typescript it should be retyped; corrections should not be made by retyping a letter or figure on top of another, a constant source of error through illegibility. Articles should carry the writer's name and address (for proofs). Punctuation is important and the semi-colon, now so seldom used, helps the reader. Style is, in these matters, a function of clear thinking, which can be learnt but not taught. Avoid the journalist's habit of trying to say several different things in one long sentence. Short words and sentences are better than long ones. When, as often happens, you get stuck in a long and involved statement, scratch it out; ask yourself 'What am I really trying to say?' and write down the answer. Most texts are far too long; after you have written yours, read it through and make it shorter; or better still copy it out again yourself, revising it in the process. This will probably reduce the typist's perplexities and errors.

Illustrations consist of photographs, plans and drawings. Every archaeologist should learn how to take photographs; it is just as easy to take a good one as a bad one. Don't rush at it; think first, and consider the lighting. Walk round your subject and don't take it with the sun directly behind you. If you take it facing right into the sun, shade the lens with your hand or somebody else's, but take care not to photograph that. Make more than one exposure, at different speeds and apertures, of important subjects. Photographs for half-tone reproduction should *always* be enlargements; these are mechanically reduced by the blockmaker, and improved in the process. Find out (if not yourself the editor) how many plates you can have and then arrange them yourself, marking on the back of each the amount of reduction, and how much (if any) of the margin can be omitted. Then draw a line with a blue pencil on the back stating the length in inches of the longest side of the *reduced* picture. This is good policy from the writer's point of view; an editor dislikes upsetting a set of illustrations thus supplied all ready to go to the printer, even if you send in rather more than he can properly afford to use. But you had much better consult him in the first place. The caption—as

short as possible—should be written on the back. Having thus arranged your plates insert references to them in the text.

Plans should always be drawn for reduction. It is desirable, whenever possible, that the published plan should not be too big to go on a page ; folders are sometimes necessary, but they double the cost. Remember that reduction reduces everything—the thickness of every line and the *spaces between* words, letters, lines and dots. Spidery lines and quaint ' arty ' letters are an abomination. Don't forget to insert a visual scale and don't draw it or the divisions and figures too small. Draw a thick marginal line round the whole, running it as close as possible to the detail ; much waste space can thus be avoided, and the amount of reduction required is lessened. Black drawing ink (not ordinary writing ink) is of course essential. There should be nothing outside the margin. The title can either be written on a blank space on the plan or set up below in letterpress. Explanations of symbols should be written on the plan itself, near the scale. Drawings of objects often do not need to have a marginal line. When several objects are shown on one drawing, the arrangement and the space between them must be carefully planned, with the amount of reduction borne in mind. Each object should have a number or letter attached to it.

Most of these remarks are of general application. There is one matter which needs qualification. The writer of an article should always be better able to choose his or her illustrations than the editor. Illustrations illustrate the text, and the author of the text should know which to choose and what he or she considers to be the essential minimum. Here, however, there may be a conflict of opinions ; the editor may not be able to afford to publish all that the author wants, or he may consider some of them (probably photographs) not good enough. The author should of course judge quality by the same standards as the editor ; but experience shows that few do. It may happen that a set of illustrations arranged and annotated for plates includes some which can't be passed simply because, as photographs, they are too bad. It may therefore be desirable for the author first to submit the photographs *selected* to the editor before making them up into plates. ' Selected ' is italicized because the author himself should make the first selection, not the editor, who will then base his decision on quality and cost rather than relevance.

Photographs are of course essential in an excavation report, but a long experience thereof has convinced the present writer that a great many of those published are useless. Certain types of pictures seem to be regarded as conventionally required, but do they really help to an understanding of the report ? A general view of the site is often helpful, but the distant view of a desert mound, views ' along Trench B ', oblique and woolly pictures of pits, might often be omitted without loss. The writer had recently to decide on several occasions in the field whether it was worth taking photographs of the ruined walls of castles. These sometimes consisted of no more than a shapeless bank of rough stones piled in a heap. He decided that in most cases a photograph was really useless ; everyone knows what a heap of stones looks like and no one needs the help of a picture to visualize it. A view from above would be useful, but one cannot always get this from the ground ; castles and hill-forts are generally built on the highest points themselves.

In the taking of photographs for archaeological purposes, including both the illustration of reports and other things besides, experience shows that the most useful ones are the close-ups. Things always look bigger when you are photographing them than they ever do afterwards. You are making records for use and illustration ; you will be constantly referring to them yourself later on while writing your report, and others will be doing the same when they read it. Have *enlarged* prints made even of those intended for your own use only ; contact-prints are a false economy. It is foolish to

spend, say, a thousand pounds on a dig and then handicap yourself to save a negligible portion of it. (You should include the cost of such prints when making your original estimate of the cost of the whole undertaking of which it is the last item, belonging thereto rather than to publication). Do your own development and printing or get them done in Europe ; there are no trustworthy photographers across the Mediterranean.

These notes are intended mainly for contributors to ANTIQUITY. Most contributors are also subscribers as well, and should know the sort of article which is likely to be acceptable. It is a cardinal rule for journalists to study the character of the articles in the journal to which they intend sending their stuff, and compose it accordingly. Try and put yourself in the Editor's place. Remember that he can never accept an article from a new or unknown writer until he has seen it. Study the length of articles and aim at shortness. There are about 650 words on a page of ANTIQUITY and the usual maximum length is 4000 words or 6 pages. (It helps greatly to write on your typescript the estimated number of words). Line-figures in the text usually occupy about half a page, seldom less and often more. Roughly speaking, the longer you make your article the better it's got to be written to prove acceptable. Assume that your readers are unfamiliar with your subject ; 90 per cent always are. Begin therefore at the beginning and not in the middle. Take trouble to write in a clear style ; it is far more difficult to write for the 90 per cent than for the 10 per cent, but it is very good for you. Don't commit the error of some specialists who despise the 90 per cent ; without them there would be no specialists. (That is as true now as in the first self-sufficient agricultural village). A clean, well-typed article has the same advantages as a well-dressed salesman.

The essence of a good article is that it conveys news or a message. Rarely—but how welcome !—there may be a New Idea, which is not the same as a new theory. If one analyses and classifies the ANTIQUITY articles during the last two years one finds that they all relate to action or method. (Review-articles are of course in a special class by themselves). Some are news-articles about excavations ; some discuss a discovery or problem, usually proferring a solution of the latter. Dating, the chief problem of the archaeologist, is well represented. A few discuss method or such things as the transmission of ideas and customs. One or two are concerned with anthropological parallels to prehistoric facts ; there should be far more of these articles. Field archaeology is also represented, but not as fully as it might be. It will be observed that ANTIQUITY does not favour articles on the picturesque aspect of ruins. To be of value such articles must have a high literary merit, and there have been few such published since Gray's *Elegy*. Is that because there are fewer ivy-mantled bowers nowadays, or because there are fewer poets like Gray ? That is a problem that might well be discussed (but not in ANTIQUITY).

There is a permanent shortage of good Notes. These should be not much more than 1000 words or less than about 500. They should be topical, newsy or challenging—but not controversial. ANTIQUITY is allergic to controversy ; an argument punctuated by silent intervals of three months falls rather flat.

In conclusion, remember two things. The editor *welcomes* articles and always *wants* to print them. He scans them eagerly when they arrive hoping to be able to accept them. Many are on the border-line, and details such as neatness of presentation, careful preparation for the printer or conciseness may often suffice to turn the scale. And remember also that he invariably judges articles by merit only, and is not at all impressed by a case-history of the author.

The Horn of the Unicorn*

by Humphrey Humphreys

(*Vice-Chancellor, University of Birmingham*)

THOUGH everyone now agrees that the unicorn never existed, this unanimity is quite recent. All through the 19th century there were periodic reports of its presence in darkest Africa or on the Asiatic steppes, and hopes that it would turn out to be a reality died hard. But if there never was such a creature why did the men of the Middle Ages believe in it so firmly and depict it so often? As Christians it was incumbent on them to do so, for it was mentioned in the Old Testament and, therefore, must be real. Its presence there was due to the authors of the Septuagint, the Hellenised Jews who, at Alexandria, in the centuries between the city's foundation and the Christian era, translated their sacred books from Hebrew into Greek and on seven occasions used the word μονόκερως (Greek for unicorn). The Hebrew original was re'em or oxen, but the context shows that a wild ox was intended, for the reference is always to an animal strong and untamable, as for example in Job xxxix, 10, 11. 'Canst thou bind the unicorn with his band in the furrow? . . . Wilt thou trust him, because his strength is great?' Why did the translators—the legendary 70—employ the word μονόκερως? There were at least two sources from which they may have derived their belief in a wild bull with but a single horn, and there may have been others in the shape of folklore now forgotten. In the first place the Greek naturalists, Aristotle and others, had put on record the reputed reality of the unicorn, though none claimed to have seen one. The earliest reference is by Ctesias, a Greek physician at the Persian court at the end of the 5th century B.C., who wrote that such animals existed in India, and it appears highly probable that he had heard of the Indian rhinoceros which —unlike the African variety and the extinct species figured in palaeolithic art—has only a single horn. The strength, solitary habits and ferocity which are said to be the most striking qualities of the unicorn support this conjecture, though Ctesias' description reminds us in some respects of the onager or wild ass. The theory is further favoured by the fact that S. Jerome, when writing his Latin translation of the Bible, the Vulgate, used rhinoceros as equivalent to μονόκερως: he had probably seen one in the Rome arena. But there was a second source from which the Septuagint scholars may have derived their belief. Assyrian and Persian art employed a convention which regulated the representation of animals in profile on flat surfaces. In such profiles an animal like an ox commonly appeared with one horn thereby solving for the artist the problem of perspective, and it is possible that alien peoples, like the Jews in captivity, without proper understanding of an unfamiliar convention, may have been led in this way to believe in unicorns. The great single-horned bulls upon which they gazed at Nineveh or Babylon probably represented the gigantic aurochs or wild ox (PLATE I, A). That was the opinion of Layard, who excavated them a century ago. This animal, extinct since the 16th century but once widespread over

* This paper is reprinted with slight alterations from the *Annals of the Royal College of Surgeons of England*, Volume 8, 1951, by kind permission of the President of the College.

Europe and the Near East, stood nearly seven feet high, and Caesar's description (in *De bello gallico*) of its strength and ferocity accords well with the biblical attribution of these qualities to the unicorn.

There is no convincing evidence that the Assyrian sculptors themselves believed in it. Indeed in the art of the ancient east there is none of that surprising unanimity on the shape of the unicorn's horn which we find in Christian illustrations. A bull, an antelope or a goat seem at different times to have supplied the model and this perhaps shows that the artists were not thinking in terms of a specific single-horned animal. But there is one feature of their art which is a source of perennial speculation. For over 2,000 years, from the Royal Tomb at Ur to the palace at Persepolis erected by Artaxerxes in 350 B.C., the art motif of a lion attacking an ungulate represented with a single horn—the lion and the unicorn fighting—recurs so constantly that many scholars have sought for the symbolic meaning which, as our knowledge of ancient art compels us to believe, underlay it. The most plausible hypothesis is that it personified the victory of a sun-worshipping patriarchal people over an older moon-worshipping matriarchal society, a struggle reflected in the myths of many nations. The early history of Egypt and Chaldea, Greek myth and modern anthropology, all indicate that the patriarchal social pattern displaced one in which descent, property and power passed in the female line. The coincidental duration of the lunar and feminine cycles suggested that the one governed the other so that the moon became pre-eminently the planet presiding over women. Now an association of the unicorn with the moon is attested by both ancient and medieval art, and from very early times the lion has served as a solar emblem. Another theory is that the allusion was astronomical, representing the triumph of summer (for the summer solstice then lay in Leo) over spring represented by Taurus, the zodiacal sign of the sun at the vernal equinox (Bunt, ANTIQUITY : December 1930). Some faint echo of this ancient feud lingered on even after the dawn of the Christian era. The theme recurs occasionally in Byzantine art and its derivatives, and appears in medieval bestiaries so that Spenser alludes to it in the Faerie Queene :—

> Like as the lyon, whose imperial powre
> A proud rebellious unicorn defyes,
> T'avoide the rash assault and wrathful stowre
> Of his fiers foe, him to a tree applies.
> And when him running in full course he spyes
> He slips aside ; the whiles that furious beast
> His precious horne, sought of his enimyes,
> Strikes in the stroke, ne thence can be released,
> But to the Victor yields a bounteous feast.

This is an exact description at an interval of 2,400 years and nearly 3,000 miles of the scene depicted in PLATE I, A. But the same scene—the unicorn charging a tree—is frequently figured in medieval art, nor is Spenser the only English poet of his period to refer to it.

Let us now come to Europe in the Christian era. The art of the Middle Ages reveals the unicorn as one of its favourite subjects, and the reason for this—even more surprising than the fact—is that the animal had now become one of the symbolic representations of Jesus Christ. We can trace this belief back to the 3rd century A.D., when there was compiled at Alexandria a collection of animal stories known as Physiologus or ' The Naturalist '. They were fables, usually adorned with a moral and some reference to a passage in scripture, and in the course of time they attained such immense popularity that they were translated into practically every written language of Europe and the Near

a. SCULPTURED ORNAMENT ON ROBE ON ASSUR-NASIR-PAL II, KING OF ASSYRIA 850 B.C.
From A. H. Layard's *Monuments of Nineveh*, I, plate 48, fig. 2

b. SCENE IN LOW RELIEF FROM A CARVED IVORY CASKET OF THE 14TH CENTURY

It is of French origin and now belongs to the Barber Institute of Fine Arts at the University of Birmingham. The Virgin, seated beneath a tree, holds a mirror, emblem of purity. The unicorn, with his head in her lap, is transfixed with a spear held by a hunter who is concealed in the branches

a A CARVED MISERICORD FROM CHESTER CATHEDRAL.
Its scene is in essentials the same as that depicted in PLATE I, B. but the hunter is a knight in armour

b. THE TUSK OF THE NARWHAL

East from Iceland to Ethiopia. Some were perhaps old folk stories; others were probably invented at the time, for the human fancy has ever delighted in such tales and been prolific in their creation, from Æsop's fables and the Buddhist Jataka to *Alice in Wonderland* and *The Wind in the Willows*. In Physiologus appeared the tale by virtue of which the unicorn, already made authentic by the Septuagint, really came into his own. He is depicted therein as a small animal the size of a goat—very different from the personification of power figured in the Old Testament, but like him, wild and untamable, proud and solitary. However, there is one method by which he may be taken. If a virgin is set in his path he will run towards her, lay his head in her lap and sink into a repose wherein he can be slain by the hunter. This picture is a parable in which the Virgin is Mary and the unicorn Jesus; his rest in her lap represents the Incarnation, and his death at the hand of the hunter the Passion, though sometimes the hunter is represented as the Holy Ghost. It had an immense vogue for a thousand years, in the course of which the unicorn acquired other mystical attributes. In Gothic sculpture and stained glass, in painting and tapestry, in illuminated manuscripts and in heraldry, he is a favourite figure from the 12th century onwards (PLATES I, B and II, A.) Nor was the obvious erotic potential of the tale neglected in the literature of chivalry. There is some variety in his pictured appearance, perhaps encouraged by the conflicting accounts of Aristotle, Aelian and Pliny; sometimes his hoof is cloven, sometimes solid; here he resembles a goat, there a horse. But on one feature there is a singular unanimity amongst the medieval artists of every kind, and that is the shape of the horn—the straight and slender spike with its spiral markings which we see projecting from the forehead of the unicorn in our royal arms.

Now the reason for this unanimity is not far to seek. The artists drew not from their imagination but from models—a number of them all exactly alike in shape if not in size—which we know from many records to have been amongst the most treasured possessions of popes and princes, of doges and of dukes. These were the actual unicorns' horns which were perhaps the most precious merchandise of the Middle Ages, worth ten times their weight in gold. The Doge of Venice had two, believed to have been looted from Constantinople when it was captured in A.D. 1204 on the Fourth Crusade; they are still to be seen. Benvenuto Cellini records how he just missed a commission from the Pope to mount one for presentation to Francis I of France. There was one at Windsor which was disposed of with the Crown Jewels under Cromwell's Commonwealth. New College, Oxford, acquired one, which is still preserved, in the 15th century. Others are recorded and no one ever doubted their authenticity till the 16th century.

And yet they were not horns at all but teeth, the tusks of that curious cetacean, the narwhal, a native of the Arctic Ocean from which it seldom if ever strays (PLATE II, B). It is one of the smaller members of the whale family, 12 to 18 feet long, and the male possesses a single tusk projecting forward, slender and straight, with spirals traced on its surface exactly as the medieval artists represented it. Like the tusk of the elephant it grows continuously, and is commonly about one-third the length of the animal. Now very rarely a dead narwhal may drift down with the summer currents and be cast up on the beaches of the British Isles or Scandinavia, and its single tusk may then be found by man. It was such chance finds, their origin obscured by successive exchanges, that were marketed by medieval merchants—possibly in all good faith—as the authentic horn of the fabulous unicorn, and they were all the more valuable for being so scarce. Their scarcity can be judged by the fact that, since their real origin became known in the 16th century, only three instances have been recorded of narwhals stranded on the coasts of Great Britain—in 1648, 1800 and 1808. There are also one or two records of tusks

being picked up. The growth of the whaling industry however in the 19th century made them familiar objects.

But there was another quality besides their rarity and their mystical associations which caused them to be so highly prized, and that was their reputed medicinal potency. A cup made from unicorn's horn had the power of neutralizing any poison put into it and small fragments ground into powder and swallowed were not only sovereign against poison but against any other ill that flesh is heir to. Belief in the first of these powers is ancient and is, indeed, mentioned by Ctesias in the 5th century B.C. as a property of unicorn's horn. But it is not confined to that animal, and it was long a popular belief, still cherished among primitive peoples, that a cup of horn has the power to purify its contents. Faith in its pharmaceutical qualities taken internally is more peculiar. It is not mentioned by Galen or Hippocrates, and as it appears to have first gained currency in the 13th century it may have been borrowed from Arabic medicine, then the chief source of new ideas. Arabs in their turn drew much from India, where faith in the protective power of horn is still widespread. Its roots reach right back to the primitive and universal belief that any form of matter which appears to be incorruptible—especially if, as in the case of ivory and horn, it be the product of living things—holds the secret of life and has the magical property of passing it on if suitably invoked or applied. Untutored minds do not draw the sharp distinction that we do between animate and inanimate matter.

It was in the 14th, 15th and early 16th centuries—the great age of political poisoning—that this reputed property of unicorn's horns won its widest credence; and as they were very scarce their price reached astronomical proportions. Their scarcity precluded the clinical tests which might have disproved their prophylactic powers, but from the beginning of the 17th century there was a slump and their value rapidly declined. This followed on the knowledge newly won of their real origin. As soon as it was realised that America was not the India its earliest discoverers had believed it to be, there began that search by British sailors for a North-West Passage which continued intermittently till the middle of the 19th century. Humphrey Gilbert, Frobisher and others coasting along Greenland and the shores of Baffin Bay for the first time in history saw the narwhal and described it. For Frobisher and his fellows it was a fish and they named it the sea-unicorn, but despite the name the glory had departed. By no stretch of imagination could this strange monster be fitted into the familiar fable and its horn was no longer exalted but debased, at any rate in terms of the currency. The Windsor horn valued in 1598 at £100,000 (more than a million pounds at today's currency values) had slumped to £600 half a century later when sold by the Commonwealth. It could be bought today for less than £10. Nor were the physicians slow to perceive the significance of the change. Marini, a Venetian doctor, published a book in 1566 denouncing the therapeutic properties of the unicorn's horn, as being devoid of all foundation in fact. He was followed a few years later by the more famous Ambroise Paré, ' The Father of French Surgery '. In England, however, the substance remained on the list of drugs which registered pharmacists were required to carry till 1741. In that year a new edition of the Pharmacopœia was published containing it, and this evoked a protest from the College of Physicians at the inclusion of a drug long recognised in scientific circles as without effect and employed only by charlatans and quacks. It was omitted in subsequent editions. Hogarth was engaged in 1741 on his series of pictures, ' Marriage à la mode ' (now in the National Gallery). He probably heard of this incident and it is perhaps for this reason that in the third picture of the series, which shows a consulting room, he painted a unicorn's horn conspicuously displayed to label the consultant as a quack.

It is to be remarked that though the spread of knowledge in western Europe extinguished faith in the pharmaceutical efficacy of unicorn's horn, it remained active farther east, in Russia and in Asia. In China it was the single horned rhinoceros, native not only to India, but to all S.E. Asia, and not the narwhal, which supplied the stock of unicorn's horn. It is still in use there for medicinal purposes, more often now as an aphrodisiac than an averter of disease, and the demand for it has led to a noticeable diminution in the numbers of this species. Nowadays the scarcity is to some extent met by a brisk import trade in the horns of the African rhinoceros, which providentially has two of them, while, as always happens when superstition holds sway, there is a fertile field open for the supply of fraudulent substitutes.

Any discourse on the unicorn is expected to account for its presence as the supporter of our royal arms, which has made it universally familiar. The explanation is simple. Owing to its mystical associations the animal was a favourite with the heralds, and two unicorns figured as the supporters of the royal arms of the last three Stuart monarchs of Scotland, James V, Mary Queen of Scots and James VI. When the last named became James I of England his heralds produced new arms for the joint kingdom. Leaving the lion which for many generations had been the English dexter supporter they installed the Scottish unicorn sinister in place of the Welsh dragon, which the Tudor monarchs had maintained there. This friendly confrontation of the lion and the unicorn is due to a dynastic incident, and does not derive from the feud figured in the art of Assyria and already described. But it is not impossible that the College of Heralds, aware of their planetary associations, should have felt it to be particularly appropriate that symbols of the sun and moon should support the new arms of a greater and more glorious kingdom.

Ploughing and Field Shape

by Michael Nightingale

THE French scholar, Marc Bloch, describes two open field systems in France ; the one with long narrow strips grouped in furlongs and ploughed by a long wheeled plough *la charrue*, the other with small rectangular plots ploughed by a short wheelless plough, *l'araire*[1]. R. G. Collingwood has taken up Marc Bloch by suggesting that in England, in Romano-British times, the *charrue* (*caruca*) was used on the Villa farms, whilst the *araire* (*aratrum*) was employed in the small plots of the villagers, the so-called ' Celtic Fields '. He further suggests that the Celtic Fields were enclosures[2].

Marc Bloch ascribed the differences between these two ploughs chiefly to the length of the plough ; others have suggested that the presence of wheels was the determining factor. To connect plough type with field shape seems correct but the classification of the plough has been vague and perhaps incorrectly determined in principle.

There are two fundamental groups of plough, those that merely scratch the ground like a harrow, and those that really turn some kind of furrow slice. The first group performs such a different type of cultivation that they would be better classed as hoes ; the rest of this paper concerns the second group which may be sub-divided into two further categories :—

(a) those ploughs that have a fixed mouldboard and turn the furrow slice to one side of the plough only,

(b) those ploughs that have a device for turning the furrow slice to whichever side the ploughman may wish.

Ploughs in either category may be heavy or light, with or without wheels, drawn by few or by many beasts, depending upon soils and local economic factors ; it is not so much the size of the plough that determines field shape but the method in which it performs its task.

The fixed mouldboard plough has been found over most of England from at least the Middle Ages to the present day, and is the parent of the tractor general purpose plough. A coulter or knife makes a vertical cut in the ground, a share cuts the horizontal furrow slice, and a mouldboard guides the slice over to the right hand side of the plough. The plough is asymmetrical and usually the share is flanged on the right hand side. The illustration (PLATE I, A) shows a simple plough of this type at work in August 1950 in a small village on the Turko-Greek border. With this plough it is not possible to wend simply up and down the field, for by such a process, the furrow slice would be placed continually on unploughed land, and in consequence only half the topsoil of any field would be turned over, in effect. Therefore, the ploughman divides his fields into lands or ridges of say 22 yards wide, and commencing in the middle, a ridge is thrown up by placing two furrow slices together ; then by wending round and round, as shown in the diagram (FIG. 1), the whole strip can be thoroughly ploughed out. It is this technique that is described in detail by Walter of Henley[3].

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[1] *Les Caractères originaux de l'histoire rurale française* (1931).

[2] Collingwood, R. G. and Myres, J. N. L. *Roman Britain and the English Settlements* (Oxford History of England) (1936), pp. 210, 211.

[3] *Husbandry*, ed. E. Lamond (1890), p. 8.

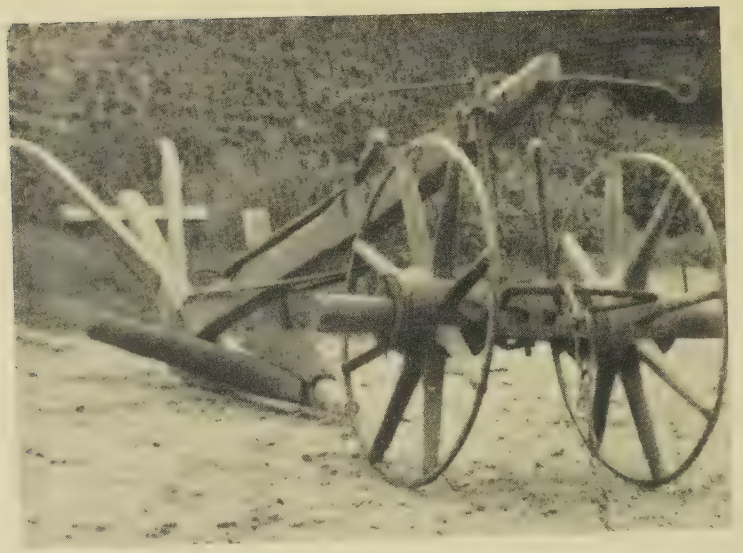
PLATE I

a. MOULDBOARD PLOUGH IN GREECE

b. ONE-WAY PLOUGHING AT CONSTANTINOPLE

facing p. 20

PLATE II



a. KENTISH PLOUGH (SHARE REMOVED)

b. FRINDSBURY PLOUGHSHARE

a. ROMAN BRONZE MODEL OF PLOUGH, FROM SUSSEX

b. ONE WAY PLOUGHING FROM *COTTONIAN MS.*

PLATE III

A strip on well-drained land might contain one ridge, whilst a neighbouring strip of a similar width might be better ploughed with four ridges if the drainage was poor, but a ridge or ' land ' would rarely exceed 22 yards in width. Perhaps M. W. Beresford was mistaken in tying too close a relationship between the ridge and the tenurial strip[4], by suggesting that one strip was co-ordinate with one ridge.

The One-Way plough operates on quite a different principle. The simplest type is that used in the Roman Empire ; it has a symmetrical share and two mouldboards which are usually referred to as ' ears ', one on each side of the beam. The base of the

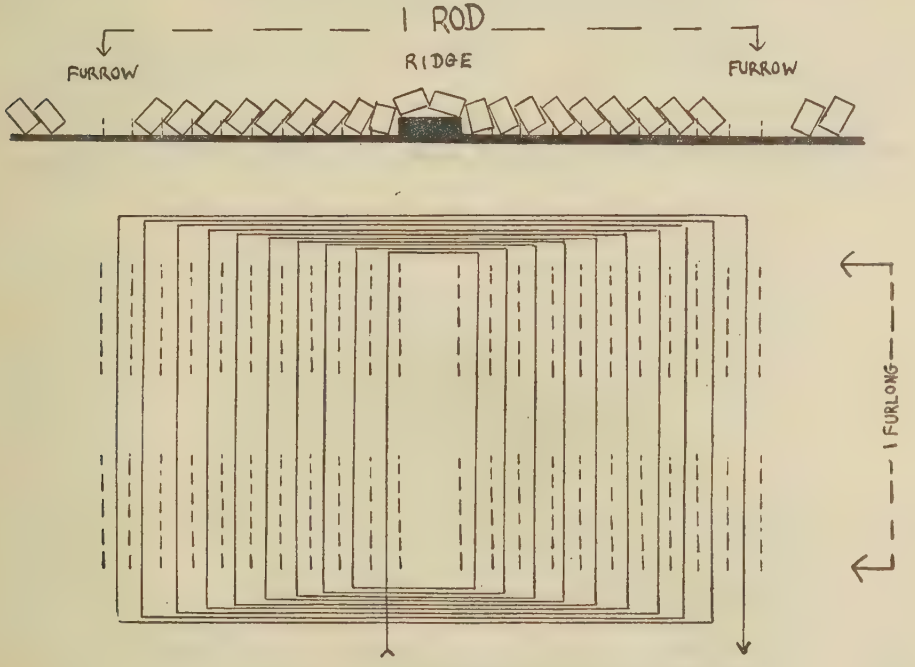


Fig. 1. ONE ROOD, PLOUGHED WITH FIXED MOULDBOARD PLOUGH SHOWING RIDGE AND FURROW

share beam is bevelled in the form of a broad 'v' so that the plough can be tilted conveniently to one side or the other by the ploughman, thereby bringing into action that ear which is nearest to the ground. In this way the ploughman can turn the furrow slice to whichever side he wishes, and can therefore progress from one end of the field to the other, without any unnecessary walking at furrow ends. He walks up and down quite simply ; there are no ridges and furrows, and it makes little difference whether the fields are square or rectangular (FIG. 2).

The bronze plough model shown in the illustration (PLATE III, A), was found in Sussex and is of Romano-British manufacture. It was perhaps the type of plough in use at the time of the occupation, and is of the simple ' one-way ' group just described[5]. It

[4] *Ridge and Furrow and the Open Field*, E.H.R., 2nd series, vol. 1, no. 1 (1948), p. 34.

[5] Now in the British Museum, 54.12.27.76. The blocks for plate III were kindly lent by the Editor of the Brit. Arch. Institute's *Arch. Journ.* Ed.

seems to correspond very closely to the description of a plough given by Virgil in the first book of his Georgics :—[6]

> ' Continuo in sylvis magna vi flexa domatur
> In burim, et curvi formam accipit ulmus aratri.
> Huic a stirpe pedes temo protentus in octo :
> Binae aures, duplici aptantur dentalia dorso.
> Caeditur et tilia ante iugo levis, altaque fagus,
> Stivaque, quae currus a tergo torqueat imos :
> Et suspensa focis explorét robora fumus '.

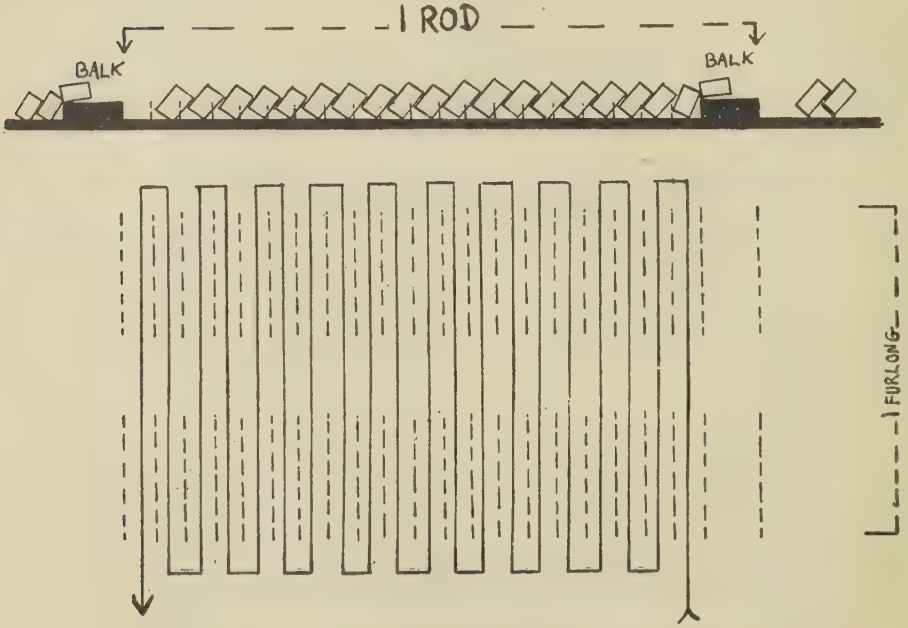


Fig. 2. ONE ROOD, PLOUGHED WITH ONE-WAY OR TURN-WREST PLOUGH SHOWING BALKS

The *binae aures* are the two ears ; the words *duplici dorso* refer surely to the keel-shaped underside of the share beam, and prove that both ears were not used at the same time, like a modern ridging plough, as many commentators have argued. Further proof that this plough was a one-way plough comes from a passage in Columella[7] :—

> ' Bubulcum autem per proscissum ingredi oportet alternisque versibus obliquum tenere aratrum et alternis recto plenoque sulcare, sed ita necubi crudum solum et immotum relinquat, quod agricolae scamnum vocant ' ;

The key words are *obliquum tenere* which almost certainly imply a tilt.

The precise meaning of words in a dead language are hard to prove, but more convincing evidence can be offered. The writer has observed a plough at work outside the Roman walls of Constantinople. The ploughman was a Greek, and his plough was

[6] *Georgics*, Book I, lines 169–75.

[7] *Res Rusticae*, Book II, Ch. 2, para. 25.

almost identical, in every respect, to the bronze model mentioned above. It had the two ears on either side of the beam, and whilst the keel was not cut out in a definite 'v', there were flanges or bevels on each side which had been either intended in the design or else became worn by the ploughman's continual tilt of the plough. The illustration of this plough (FIG. 3) should be carefully compared with that of the Roman model (PLATE III, A). The soil had been well baked by the sun and was excessively hard, with the consequence that the ploughman had great difficulty in drawing a clean furrow and of keeping his plough tilted the whole time ; he drove his team straight up and down as he worked across the field, in the usual manner of one-way ploughing described above (PLATE I, B).

We will further examine the history of the one-way plough in England. A ploughshare of Roman date, found at Frindsbury in Kent (PLATE II, B) is symmetrical and looks very similar to that on the Sussex bronze model.[8] It suggests an early use of ploughs

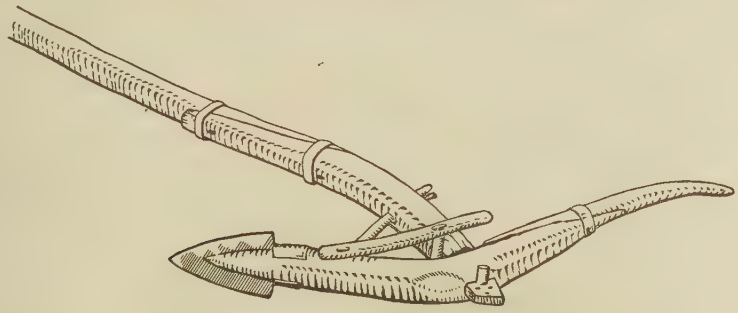


FIG. 3. PLOUGH FROM CONSTANTINOPLE, SHOWN ON ITS SIDE

of this type in Kent : elsewhere the writer will refer to their influence on the Kentish field system.[9]

A later development of the one-way plough can be seen in the well-known illustration (PLATE III, B) from the 10th century *Cottonian MS.*[10] Until Mr F. G. Payne recently exposed its true function, it was always quoted as a typical Saxon mouldboard plough.[11] The ploughbeam is supported on wheels, and can no longer be tilted. Instead a ' shifting ear ' can be taken off the beam and placed on the opposite side at the end of each furrow. In a similar way, the coulter, which has now become a part of the plough, can be changed from side to side by the stick and thong device seen in the illustration.

Fitzherbert writing in 1523 states, ' In Kente they have other maner of plowes, and some wyll tourne the sheldbredth at every landes ende, and plowe all one waye ', the sheldbredth is of course the ' shifting ear '.[12]

In 1653 Blith remarked, ' The Kent plough is similar to ploughs used in Picardy and Normandy '.[13] The writer has recently examined the fields of Normandy where

[8] Now in Rochester Museum. For a report of its discovery and evidence of its antiquity, see *Arch. Cant.*, vol. XVII, pp. 189–92 and vol. XVIII, pp. 189–95.

[9] To be published in *Arch. Cant.*, vol. LXV.

[10] B. M. Cottonian MS., Tib. B.V. (part 1), fol. 3.

[11] *Archaeological Journal*, vol. CIV (1948).

[12] *Husbandry* (1523), para 2.

[13] *The English Improver Improved* (1653).

both strips and plots lie together ; the plough in most frequent use is an iron turn-wrest plough, on which a pair of mouldboards are fitted to a swivel and either one or the other can be brought into action by turning the swivel. This plough is probably a descendant of the *araire* mentioned by Marc Bloch and the plough to which Blith referred.

Salter and Turner in their introduction to the *Register of St. Augustine's Abbey, Canterbury*, state that there was a persistent use in the monastic estates of the turn-wrest plough, but they do not quote their evidence.[14]

By 1796, if not centuries before, the plough used in Kent became fixed in the type described by John Boys in his report to the Board of Agriculture[15] :—

' The Kentish turn-wrest plough is almost the only one used or known. Some few instances of trials of the Suffolk ploughs, which go with two horses abreast, and are driven by the ploughman, occur, but they have not been found to answer the purpose of the farmers of this county, and are in consequence laid aside for the native implements ; which, for all sorts of soils, and all required depths of ploughing, is the best I have ever seen and tried. It consists of a beam of oak ten feet long, five inches deep, and four broad ; behind which is a foot, five inches by three and a half, and three feet and a half long ; on the top of which the handles are placed ; the foot is tenoned to the end of the beam, and mortised at the bottom to the end of the chep. Through the beam, at two feet five inches distance from the foot, is a sheath of oak seven inches wide, and one and a half thick, which is mortised into the chep in an oblique direction, so that the point of the share is twenty-two inches distant from the beam. The chep to which the share is fixed is five feet long, four inches wide, and five inches deep. The share is of hammered iron, weighs about thirty-two pounds, is twenty inches long, and from four inches and a half to seven inches wide at the point. The upper end of the beam rests on a carriage with two wheels, three feet two inches high. On the axle-tree is a gallows, on which is a sliding bolster, to let up and down. Through the centre of the axle is a claspiron, to which is fixed a strong chain, called a tow, that comes over the beam, so fixed, as by means of notches (or a pin called a check) to let the whole plough out a greater length from the axle, thereby letting it down to a greater depth . . . It is remarkable for going well among flints and rocks. With these ploughs the soil may be turned up a great depth, and laid quite flat, without any kind of furrow being left open ; which is a great advantage in a dry soil '.

He further states that in the Weald of Kent they used a foot plough ; that is a similar plough without wheels. This fact adds weight to our contention that the presence or absence of wheels on a plough is not a fundamental difference.[16]

Since the time Boys wrote hardly any change has taken place in the Kent Plough. Compare the ' turn-wrest ' from Northbourne (PLATE II, A) with his detailed description; notice the similarity between the wrest and the ear on the Roman plough, they have little in common with the mouldboard of the ridge and furrow plough.

The turn-wrest plough was by no means restricted in its use in Kent alone : reference to the 18th century reports to the Board of Agriculture and William Marshall's works shows that it was known in several of the southern counties of England.[17]

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[14] p. XLII.

[15] *A general view of the Agriculture of the County of Kent* (1796), p. 45.

[16] Illustrated in C. S. Orwin, *The Open Fields*.

[17] W. Stevenson, *General View of the Agriculture of the County of Surrey* (1809), p. 118 ; W. Marshall, *Rural Economy of the Southern Counties* (1798), II, p. 368 (for Sussex Downs) ; Chas. Vancouver, *General View of the Agriculture of Hampshire* (1810), p. 94.

What effect does the one-way plough have upon local topography ? There is no excessive walking at furrow ends, as there is with the mouldboard plough, and in consequence the ploughman is not so tied down in his choice of field shape. If he has a heavy plough drawn by a team of eight oxen, he will probably plough a full furlong, and if he shares the plough with others, a strip pattern will be formed similar to that found in ' ridge and furrow ' areas, only without the ridges and without the furrows. If, however, he has a light plough, he may prefer to draw a shorter length, and a squarish plot will result. R. G. Collingwood and other scholars have implied that square plots should be associated with a closed system of agriculture,[18] but we suggest that if any form of co-operation is practised, plots fit into an open field organisation as easily and as naturally as do strips. Nevertheless it is true that squarish plots quickly become associated with inclosures because of the ease with which they can be consolidated. The great number of plots that were ploughed in parts of Kent probably accounts for early inclosure there.

With this type of plough, balks of turf are usually left between each individual holding ; for at the commencement of ploughing the first slice is placed on unploughed land (FIG. 2). After a number of years, there may be a mount-up of soil on one side of the holding, and lynchets are formed. With the mouldboard plough, as Dr Orwin has stated,[19] one would not expect to find balks in the open fields, because the piece of unploughed land is hidden under the ridge (by modern practice it is actually ploughed out first) and the furrows make excellent boundaries : with a one-way plough there would be nothing to mark the boundary, unless a balk were left. Seebohm[20] noticed the connection between lynchets and one-way ploughing, but Dr Orwin challenged his theory by suggesting that the lynchets on downland country were all made earlier than Saxon times, and that strip cultivation has no connection with lynchets. Dr Orwin calculated that many years of one-way ploughing on a thin downland soil would denude completely the highest part of the strip, and would cut some feet into the solid chalk.[21] We suggest that Seebohm was working along the right lines and that the extreme condition envisaged by Orwin could always be prevented by manual spade work. Piers Ploughman carried a spade ; in Greece and Turkey today, a spade is used alongside the plough and these factors lead us to believe that it was the joint use of one-way plough and spade that formed the lynchets.[22]

Colonel Drew recently challenged Dr Orwin after finding balks between the ' Lawns ' or strips in the Isle of Portland, off the Dorset coast,[23] but he carried his views to the opposite extreme by assuming that balks might be associated anywhere with Open Fields. Portland was farmed on a three field system[24] and there is to this day a mass of strip holdings ; but did Drew consider that these limestone downs had been ploughed most probably by one-way ploughs ? A visit to the island will show that the balks or ' lawn-shades ' were usually no more than six inches wide. A farmer stated that each proprietor owned the lawn-shade on one side of his strip only and was entitled to plough

[18] *Roman Britain and the English Settlements*, pp. 210, 211.

[19] *The Open Fields*, p. 43 et seq.

[20] *English Village Community*, p. 5.

[21] *The Open Fields*, pp. 319–22.

[22] W. Marshall in *Rural Economy of the Southern Counties* (1798), II, p. 301, discusses the formation of lynchets on the downs between Petersfield and Farnham.

[23] ANTIQUITY, no. 86 (1948), pp. 79–81.

[24] J. Hutchins, *History of Dorset*, II, p. 809.

as much of it as he could ; but with a one-way plough it is difficult to plough every inch of the balk, without removing one's neighbour's soil. On the sloping ground the balks were naturally rather wider and took the form of lynchets. The general appearance of the strips and lynchets was very similar to that of the fields in the parts of Normandy, mentioned earlier, where the turn-wrest plough is used today. At Portland we noticed only the tractor plough ; the lawns are disappearing rapidly, but before all evidence is destroyed by modern development it may still be possible to prove that one-way ploughs were in use on the island.[25]

Summary

1. There are two main categories of plough which have influenced field shape in S.E. England: those with fixed mouldboards and those with shifting ear or turn-wrest device.
2. It is the technique employed by the plough that is of fundamental importance in determining field shape, not its size or the number of draught animals or the presence of wheels.
3. The mouldboard plough is to be associated with long strips because any other field shape will necessitate excessive walking at the furrow ends. The one-way plough may be associated with strips or square plots.
4. The mouldboard plough gives rise to ridge and furrow, which may be useful for drainage purposes. The one-way plough is accompanied by balk or lynchet ; the land ploughed being usually found in Limestone areas where drainage is good.
5. It seems probable that land ploughed either in strips or in intermixed plots can be equally associated with open field systems of agriculture.

[25] From general enquiries that have been made it appears that the turn-wrest plough was used extensively on the light downland soils of Dorset.

Books Received

The inclusion of a book in this list does not preclude its subsequent review

Persecution of the Jews in the Roman Empire (300–438), by James Everett Seaver (University of Kansas Publications, Humanistic Studies, No. 30, Lawrence, Kansas, 1952, 101 pp. $2.00). [A new survey of the Jewish-Christian conflict during the 4th century outlining the tragic decline of the relation between Jews and Christians and its causes, illustrated by extracts from laws and canons of the period. R.J.F.]

Pictures of Ivory and other Animal Teeth Bone and Antler, by T. K. Penniman. (Occasional Papers on Technology No. 5, Pitt Rivers Museum ; Oxford University Press, 1952. 10*s*). [A useful booklet containing photographs of the characteristics and structure of elephant ivory, mammoth ivory, hippopotamus canines and incisors and the like for the purpose of identification of archaeological finds and museum pieces. R.J.F.].

Old World Bibliography No. 5, by H. L. Movius (American School of Prehistoric Research, Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge (Mass.), 1952. $1.00). [A useful bibliography of nearly 1100 titles of recent publications mainly in Old World Palaeolithic Archaeology and Palaeo-Anthropology. R.J.F.]

Konstantins Kirche am Heiligen Grab in Jerusalem nach den Ältesten Literarischen Zeugnissen, by Erik Wistrand (Acta Universitatis Gotoburgensis lviii, Wettergren und Kerbers Förlag, Göteborg, 1952. Kr. 8.–). [The author re-examines the evidence on the construction of Constantine's church as published by A. Heisenberg (1908) and Vincent (1912) and supports his own reconstruction by evidence from ancient literature already partly published by Schmaltz (1918). R.J.F.]

Der Tassilokelch, by Günther Haseloff (Münchener Beiträge zur Vor- und Frühgeschichte Band 1 ; 88 pp., 39 illustr., 16 plates, C. H. Beck'sche Verlagshandlung, München, 1951. DM 14.50). [A scholarly discussion of the chalice made by an English goldsmith at Salzburg and presented to the monastery of Kremsmünster by the Bavarian Duke Tassilo in the second half of the 8th centurya.d. R.J.F.]

A History of Board Games other than Chess, by H. J. R. Murray, 86 illustr., Cumberlege, London, 1952. 42*s*. [The expert author analyses some 270 board-games which can be classified under some four types with very few exceptions. This study amply supported by notes and bibliographical data should go far towards the study of their evolution and spread. R.J.F.]

Graltempel und Paradies ; Beziehungen zwischen Iran und Europa im Mittelalter, by Lars-Ivar Ringbom (Wahlström und Widstrand, Stockholm, 1951, 546 pp., 137 illustr. Sw. Kr. 30.–). [Using literary, archaeological and history of art data the author traces strong Iranian influences in the medieval ideas and plans of the Holy Grail temple, the royal chapel and the earthly paradise. Excellent illustrations and bibliography. R.J.F.]

The current number of the Argentine publication RUNA (Vol. IV, parts 1–2) is devoted exclusively to the history, antiquities and physical anthropology of Easter Island. It is largely a summary, in Spanish, of existing knowledge, but includes an article by Imbelloni on the script of the Island which includes some original work. Easter Island is in the news owing to Mr Heyerdahl's efforts to connect its antiquities, particularly the stone carvings, with those of Peru, but there is nothing in this publication to support that thesis. G.H.S.B.

TUTANKHAMUN'S TREASURE, by PENELOPE FOX. Geoffrey Cumberlege (Oxford University Press), 1951. 25*s*. [An elegant picture-book with 72 excellent plates preceded by 37 pages of accurate and relevant introduction. As a popular book it supersedes Howard Carter's own work, now out of print. F.A.]

PROCEEDINGS OF THE FIRST PAN-AFRICAN CONGRESS ON PRE-HISTORY, 1947. Basil Blackwell, Oxford. 1952. 35*s*. [Appearance delayed and size reduced owing to difficulties and cost of publication. Impossible to summarize, but the papers are authoritative and important. F.A.]

ANCIENT EGYPT, by J. E. MANCHIP WHITE. Allan Wingate, 1952. 21*s*. [Describes life in ancient Egypt and gives a short conspectus of Egyptian history with a useful chart. A popular book, and the public for whom it is intended should find it easy to read and instructive. F.A.]

AGRICULTURAL ORIGINS AND DISPERSALS, by CARL O. SAUER (Amer. Geogr. Soc., 1952. $4.00). [The author deduces from recent distributions a centre in Southeast Asia, whence the techniques of vegetative cultivation and the domestication of dog, pig and fowl were diffused, both to the New World and to Western Eurasia, before the rise of cereal cultivation and cattle-breeding. V.G.C.]

Notes and News

HUT-CIRCLES IN NORTH-WEST WALES

In ANTIQUITY No. 72 for December 1944 the present writers published a short article on their findings with regard to Hut-circles in North-west Wales up to that date. Recently Mr W. E. Griffiths has brought out two papers on the same subject. 'The Development of Native Homesteads in North Wales', ANTIQUITY, Dec. 1951, pp. 174–186, and 'Early Settlements in Caernarvonshire', *Archaeologia Cambrensis*, 1950, pp. 38–71. In these papers Mr Griffiths' treatment of the subject differs from our own in certain fundamental points. Since he makes no explicit reference to this difference and implies that he is expanding and building on our previous findings, we feel that we ought to draw attention to the fact, to prevent other students being confused in an effort to reconcile our discordant views.

In his ANTIQUITY article Mr Griffiths gives a classification of hut types from A to F with subdivisions A1, A2, etc. In the case of his types D and F, which are our 'Enclosed Homesteads' and 'Concentric Circles', there is no difference of opinion between us and nothing need be said, except that we were careful to use the word 'Homestead' to describe that particular type of enclosed court-yard house which is a unified building, distinct from the loose assemblage of hut-circles or 'hut-group'. We did not use the term 'enclosed group' which Mr Griffiths attributes to us.

It is in the treatment of what we called 'Unenclosed Groups' that we part company. Here it seems that Mr Griffiths has misunderstood our use of that term, for he begins his classification with his types A1, A2 and B, all of which are normal 'Unenclosed Groups' and then says :—

> 'With type C we come to the first of the basic Hemp-Gresham categories, the "unenclosed" huts'. (ANTIQUITY, p. 178).

This is a complete mistake. He has already dealt with typical 'Unenclosed Groups' and type C is a sub-division which is all his own. As an example for C1 he gives the huts at Ty Mawr on Holyhead Mountain in Anglesey as a 'prime instance'. This site was the only one in North Wales, of those known to us, which we were unable to fit into our scheme of classification, and we expressly excluded it in a note under our distribution map of 'Unenclosed Groups' (*loc. cit.*, p. 184). In our view the Holyhead huts should be in a category of their own, as we still do not know of any others with which they can be compared. They are certainly not paralleled, as Mr Griffiths says, by the normal 'Unenclosed Group' at Bwlch Gwernog, or by any sites that we have seen in Cwm Pennant and Cwm Ystradllyn, where he claims that the C1 type reaches its 'greatest development'. The large single huts on Holyhead Mountain do have several features in common with the 'Enclosed Homesteads'. They are dated by finds to the same period, they have a similar construction, and, most important, they are associated with cultivation terraces. Mr B. H. St. J. O'Neil has already suggested that one of the huts at Porth Dafarch seems to illustrate a transition in type from the single hut to the elaborate courtyard house such as Din Lligwy (*Arch. Camb.*, 1940, p. 68).

By attributing to our 'Unenclosed Group' classification an erroneous type site, which we had in fact disclaimed, Mr Griffiths not only tends to confuse other workers in

this field, but has apparently confused himself, for he is, it seems, unable to recognize sites of ' unenclosed ' type as such, since on page 38 of *Arch. Camb.*, he says :—

> ' A close study of the Caernarvonshire hut-groups brings to light a number of interesting facts. Among them is the emergence of a well-defined type of settlement which appears to have escaped the attention of most earlier observers. There is no doubt that there are at least two dozen of these settlements in the county, probably more. Twenty of them are described below . . . '

This can only mean that the author claims to put before us a series of new sites of unfamiliar type ; but an examination of the descriptions and plans that follow only reveals a selection of quite normal ' Unenclosed Groups ', some of which have been already recorded. Most observers of these sites are well aware that they are to be counted in Caernarvonshire not by the dozen but by the hundred.

The twenty sites mentioned are located on a distribution map given on page 58 of *Arch. Camb.* and published, like the illustrations of both papers, as ' Crown Copyright '. Readers may assume that this map is to be accepted as a complete official record of Early Settlements in Caernarvonshire, but we feel that it should be regarded only as a record of Mr Griffiths' researches to date, just as our map of the same sites showed how far we had got in 1944.

It is well known that the classification of archaeological sites from surface indications alone is beset with difficulties and, if carried too far, will confuse rather than clarify the issue. We made the broad and simple division of hut sites in North Wales into ' Enclosed Homesteads ' and ' Unenclosed Groups ' to serve as a basis for their study ; but we stated at the same time that within the latter division there were various sub-types, which could not be all of the same period (ANTIQUITY, No. 72, p. 186). With incomplete field-work and lack of any excavation we were not prepared to go further than that. In his twenty sites Mr Griffiths has recorded several of the ' unenclosed Groups ', but we cannot agree with him that these twenty sites are in any way a homogeneous group to be set apart from the hundreds of other very similar sites in North Wales.

It is, however, not only in the principles of classification that there is a difference of opinion between Mr Griffiths and ourselves. We are also at variance in details of field-work. Space is limited and we can do no more than consider one site as an example of this. In his ANTIQUITY article, page 175, he takes as a type site for his group A a single hut near Fronheulog, Llanaelhaiarn, which he describes as ' roughly built of piled stones, with a couple of tiny enclosures bounded by lines of ruined walling '. In *Arch. Camb.* (p. 40) he says of the same hut that it is ' constructed of a double ring of orthostats '. Since the distinction between piled and orthostatic masonry is fundamental in the classification of huts, this discrepancy of record is important. We recorded this hut, which is very poorly constructed with orthostats, in 1945, but the enclosures, with which it is said to be associated, were nowhere visible to us. On recent visits to the site we have not been able to see anything of the ' lines of ruined walling ' (ANTIQUITY), or of the ' large stones placed roughly in line ' (*Arch. Camb.*), or of the straight banks indicated by hachures in the plan of the site on page 39 of *Arch. Camb.* In areas closely adjoining the hut there are traces of comparatively recent cultivations in the form of very slight ridge and furrow, but we can make out nothing more. We do not think that the ' porch ' can be established without excavation.

To both the west and east of the Fronheulog hut are large systems of cultivation terraces associated with ' Enclosed Homesteads ' and the orthostatic construction of the hut is also a typical feature of ' Enclosed Homesteads '. It is surely more logical to

regard this hut as an outlier of the neighbouring sites, such as often occurs, in which case its date is possibly 3rd or 4th century A.D. In any case we cannot agree that it is of Neolithic or Early Bronze Age date (ANTIQUITY, p. 177).

It has long been our opinion that a satisfactory classification of the various types of ' Unenclosed Groups ' can only be made on a basis of fairly complete field-work in North-west Wales, supported by excavation on representative sites. With this in mind we initiated the *Caernarvonshire Excavation Committee*, which is now working on the problem under the Chairmanship of Sir Ifor Williams and with Dr G. Bersu as Director of Excavations. The work is necessarily slow, but while it is in progress we hope that workers in this field of research will continue to accept our term ' Unenclosed Groups ' as covering all those numerous hut sites in North-west Wales, other than the ' Enclosed Homesteads ' and ' Concentric Circles ', for we believe this to be a useful and accurate classification.

W. J. HEMP,
C. A. GRESHAM.

As Secretary of the Royal Commission on Ancient Monuments in Wales and Monmouthshire at the time when the greater part of the work on which Mr Griffiths' papers were based, was carried out, I would offer the following comments on the above criticisms. I am principally concerned with the point, rightly raised by Mr Hemp and Mr Gresham, concerning the ' official ' character of the material. I would define it as follows : Illustrations published with the consent of the Royal Commission and marked ' Crown copyright ' will be regarded as having the authority of the Commission and as conforming to the standard of accuracy expected of such a body. Readers will also tend to consider the descriptions of the sites listed in *Archaeologia Cambrensis* (pp. 39–53) as having the general authority of the Commission, though I do not think that anyone would expect the exact wording of these descriptions to qualify as ' official '. This is my own view and within those limits I accept responsibility for having advised the publication of this material. Misunderstandings that have arisen owing to my resignation in 1948 do not alter the fact that this responsibility rests on me, not on Mr Griffiths nor on the present Secretary.

1. The plan of the remains near Llethr ddu (*Arch. Camb.*, fig. 1) was made under my instructions ; owing to an oversight it was not checked. This was abundantly clear when I recently revisited the site. I am satisfied that the hut circle itself is an example of the early type as defined in the articles. I should label the ' porch ' doubtful. The enclosures, which are represented in a form more definite than is justified by the remains, are not demonstrably associated with the hut. On reflection I feel that they are best explained as traces of cultivation of indeterminate, probably recent, date.

2. The ' distribution ' map (*Arch. Camb.*, fig. 9) is, as Mr Hemp and Mr Gresham point out, a map shewing the locality as of the sites described. It should not have been classed as belonging to the Commission. Once this has been admitted it can be recognised as a useful and desirable contribution to the article.

3. On reflection I doubt whether it was desirable to have advised the publication of the plans of the early settlements in their present form. (See *Arch. Camb.*, figs. 1–7). These remains are very fugitive and the evolution of a technique that will make them intelligible to readers and, at the same time, avoid misleading students and field workers, is a matter of considerable difficulty. A comparison of the different drawings will reveal a gradual development of the technique. I am satisfied that, with the exception of the site discussed above, the surveys are accurate, but the conventions used in some of the drawings are unsuitable. In particular I would argue that the hard definite lines with

which the huts and walls are indicated in the plans of the two settlements on Gyrn ddu (*Arch. Camb.*, figs. 3 and 4) are so little justified by the remains now visible as to be misleading. Mr Griffiths can, however, hardly be blamed for using plans which I was prepared to accept.

I am not formally concerned with the rest of the text, which represents Mr Griffiths' own views and is clearly put forward on his responsibility. I would, however, add that I am in general agreement with his deductions and conclusions. I regard his two papers as a valuable attempt to analyse and classify the large assembly of ' unenclosed groups ', which Mr Hemp and Mr Gresham recognised in their pioneer study as belonging to more than one period and culture. It is unfortunate that in doing this the writer has unwittingly misrepresented their views and attributed to them opinions, which they do not hold. Mr Griffiths agrees that this is a correct statement of the position and has asked me to include in this note a very sincere expression of regret that he should inadvertently have distorted the case put forward by his predecessors in this field. It only remains for me to express my own regret for such shortcomings as have been exposed by the foregoing criticisms, a regret the deeper in that they might be held to reflect unjustly on the present staff of the Royal Commission. C. A. Ralegh Radford.

CONGRESS OF AMERICANISTS

The 30th Session of the International Congress of Americanists was held in Cambridge from August 18 to 23, 1952, when about 150 scholars from many countries in Europe and America and two from Japan met to study the New World and its inhabitants. In such Congresses, archaeology plays a large part, and this was no exception. It was a notable occasion, since the Congress had only met once before in Great Britain, when it was held in London in 1912. The sole surviving member of the 1912 Organizing Committee, Sir John Myres, was a member of the Congress although he could not be present. There was much to attract the Congress to Cambridge. The surroundings are interesting and agreeable, the University generously provided most convenient accommodation for meetings, arrangements were made for many delegates to stay in St. John's College, and the American and other collections in the Museum of Archaeology and Ethnology were of considerable interest to the archaeologists and anthropologists who attended.

The President was Mr J. Eric S. Thompson, the well-known Maya scholar, an old alumnus of Cambridge, who was a very appropriate choice because the most notable recent archaeological work presented to the Congress concerned Central America. In particular, accounts of an important burial chamber found under a pyramid and other discoveries at the Maya city of Palenque were presented by Mexican archaeologists, and recent work done in British Honduras under the auspices of the University Museum at Philadelphia was described by Dr L. Satterthwaite. Attention was also drawn to official neglect of the antiquities of the Colony, which contains an unsuspected abundance of Maya remains, and it is hoped that some action may be taken in consequence. A brief account was given of a new discovery of stone points in undoubted association with the skeletons of extinct animals near Mexico City, which does something to support the antiquity of Tepexpan man, about which doubts have been expressed. Of interest to historians was a paper by Dr M. Ballesteros, of Madrid, on the History of Peru written by Father Martin de Murúa, based largely on his researches in the Duke of Wellington's archives. Animated discussions were provoked by three papers read by Mr T. Heyerdahl on the implications of his voyage on the Kon Tiki raft, but it is probably fair to say that

most archaeologists and anthropologists remain unconvinced that the Polynesian islands were originally populated from Peru.

In connection with the Congress, an important exhibition of ancient Mexican manuscripts was arranged at the Fitzwilliam Museum. Exhibits were drawn from the British Museum, the Bodleian Library and the Liverpool Museum, and, apart from a few notable examples which may not leave the institutions in which they are housed, almost all the examples in the British Isles were shown. The exhibition also included some fine unpublished water-colours of American Indians, over a century old, from the collection of Maximilian, Prince of Wied.

Outside activities included receptions by H.M. Government at the great house at Audley End and by the Vice-Chancellor at Downing College Lodge. Since the Royal Anthropological Institute had taken the initiative in inviting the Congress to come to England, it was appropriate that the Huxley Memorial Lecture should have been given in Cambridge to an audience largely composed of Congress members. The lecturer was the well-known Danish anthropologist, Dr K. Birket-Smith, who took as his subject an historical account of anthropology in Denmark. The customary dinner which followed was combined with the Congress dinner and held in St. John's College Hall. It was not the least of the many opportunities of personal contact which the Congress afforded, and which are probably the most valuable feature of such gatherings.

G. H. S. Bushnell.

THE EARLIEST NEOLITHIC PHASE

There have been two fundamental inventions in human history—food-production and the substitution of mechanical for animal power in industry. Each has been a predisposing cause leading to others of almost equal importance. (We are not here concerned with two others—the discovery of fire which is lost in the mists of the earliest Stone Age, and of the domestication of animals, about whose origin nothing certain is known). Food-production led at once to settled community-life, superseding the roving life of the hunter and forager whose necessarily small social units could be accommodated, when not on the move, in caves. It is now customary to apply the term ' neolithic ' to these earliest food-producing villages and to equate the beginning of the Neolithic Period with the foundation of the first of these villages. Immediately before the Neolithic Period was one which (in the East) may have lasted for two or three millennia and is called the Mesolithic Period. Being by definition pre-food-producing it belongs rather to the long hunting period of the Palaeolithic or Old Stone Age of which it is the tail end. It fills the gap between the end of the last Ice Age about 8000 B.C. and the attainment of something like the present climatic conditions. This transitional period in Europe is called the Boreal, and was cold and dry. It was followed about 6000 B.C. by the Atlantic Period which was warmer and moister there than the present climate. We do not yet know what in the Ancient East corresponded with these climatic fluctuations, but we may be sure that some fluctuations did occur, and it seems not unreasonable to connect them, perhaps indirectly, with the invention of food-production.

Until about 1948 it was customary also to assign any post-palaeolithic culture-stratum that yielded stone implements but no pottery to the Mesolithic Period, with the corollary that it belonged to the hunting rather than the food-producing stage. We now know of three sites where permanent settlements and houses existed, but whose inhabitants did not make or use pottery ; these are Jericho, Jarmo in Iraq, and Kili Ghul Mohammad near Quetta in Baluchistan. The first two have provided abundant evidence of food-production. So far only preliminary reports have been published by the excavators

(two of them in ANTIQUITY); but the importance of the discoveries seems to warrant a note calling attention to them.

At Jarmo the cultural deposits are about seven metres thick and pottery is found only at the top. The pre-pottery layers have yielded houses of touf (compressed earth) resting, in the upper layers, upon a foundation of stone. (Similar houses are built today in many countries.) Food-production is proved by the discovery of grains of wheat (two varieties) and a legume, of stone querns for grinding the grain, pits for storing it and ovens for baking bread. Animal remains included sheep-goat—these bones are only with difficulty distinguishable—cattle, pig, dog, and teeth of an equine. The teeth of the sheep-goat were mostly of yearlings, which suggests domestication rather than hunting. There were a few ground stone axes and adzes, and some flakes of obsidian which must have been imported from several hundred miles away and suggest trade. A steatopygous female figurine links the culture, however remotely and indirectly, to Africa and the Mediterranean. Sixty per cent of the flints found in Level 6 were microliths, but they did not resemble those, of Gravettian type, from the cave at Zarzi, and Braidwood maintains that there is a gap between Zarzi (which is mesolithic) and Jarmo. He believes that there was a similar gap between the Natufian of Palestine and the earliest neolithic there. Against this is the fact that both the Natufian and Jarmo have produced flint sickle-blades, implying agriculture. However this may be—and Jericho may solve the problem—there does still seem to be a gap between the caves of the Iran Plateau (Zarzi, and those excavated by Coon) and Jarmo. It is the last considerable gap in the sequence of human cultures.

Braidwood, writing before Miss Kenyon's excavations, equated Jarmo with Garstang's levels 10–17 at Jericho, and his insight was abundantly justified. There is no need to describe at length Miss Kenyon's discoveries which readers of ANTIQUITY can read of for themselves. She found a well-stratified pre-pottery neolithic settlement, with mud-brick houses and a town wall of stone. The site can therefore be regarded as a pre-pottery neolithic town. Food-production was indicated by quern-fragments and storage-bins.

It may be asked how settled life—and cooking—was possible with utensils of pottery? The answer could be given by any nomad today. But at both Jericho and Jarmo stone vessels were found, and at Jarmo receptacles of skin, wood or basketry have been suggested. ' Of the latter ', says Braidwood, ' we found no trace except for impressions in the mud that may have been made by mats or baskets '.

Jericho has not yet been dated by radiocarbon, though it is hoped to do so. Jarmo has been dated three times and the results are nicely consistent. Braidwood thinks that there is ' little doubt that Jarmo began to flourish around 4750 B.C.'

The third site, Kili Ghul Mohammad near Quetta in Baluchistan, is some 1500 miles east of Jarmo. An exploratory excavation was carried out in 1950–51 by Mr Walter A. Fairservis on behalf of the American Museum of Natural History. The mound which was discovered by Professor Stuart Piggott contains, beneath 6 metres of deposit containing potsherds, another deposit nearly as thick without any, but with flint flakes, mud brick walls, abundant animal bones (some worked) and charcoal. As at Jarmo the lowest level contained no wall-remains. The overlying deposit contained Quetta ware, regarded by Piggott as probably ' the earliest yet identified in Western India ' and comparable with those of Susa I, Giyan V and Sialk III (p. 75).

It is not possible to equate the pre-pottery layers of these three sites chronologically; they are too far apart for cultural links to be expected, and only one so far has been dated by radiocarbon. They may or may not be roughly contemporary. All have

produced conclusive evidence of permanent habitation, and two at least of food-production. The evidence of Jarmo, though falling short of proof so far, is in favour of the domestication of food-animals, and that of Kili seems, from the abundance of animal bones, to be consistent. What we most need now, apart from archaeology, is a study of the post-glacial climatic fluctuations in the Tigris and Euphrates valleys. Here the techniques of Western Europe, such as pollen analysis and varve-counting, seem unlikely to be of any use. Something might perhaps be done with snails which have proved very useful in reconstructing the physical and climatic regimes of the black earth region between the Blue and White Niles, which geographically resembles that between the Tigris and Euphrates. A series of deep pits dug between the two rivers might be very informative, if the digging of them were not prevented by water seepage.

It is tempting—and we have yielded to the temptation—to speculate on the spread of the knowledge of food-production. This must surely have been more than the transmission of an idea; the actual seed must have been transmitted. If it began in the Fertile Crescent, when did it penetrate up the Nile Valley? The radiocarbon dates of the earliest food-production *at present* known—and of course all are minimum dates—are quite consistent: Jarmo 4750, Fayum about 4000, Shaheinab (Sudan) about 3500. (Sites of the Shaheinab type have produced what I believe to be quern-fragments, not ochre-grinders). Such a progress does not involve any considerable movement of population. It is probable that the earliest dwellers in the Middle Nile region at any rate came from the west. My own opinion is that they were wanderers who settled down beside the river (and the Fayum lake) because it was the only place where they could grow crops, or at any rate the best place. O.G.S.C.

VASES SUPPORTS

In vol. 23, December 1949, Dr J. F. S. Stone compared the size, form and a peculiar feature of neolithic objects, believed to be stands for pots, found in Brittany and the Channel Islands, with one belonging to the lacustrine culture to the west of Lake Victoria in East Africa. The latter is described as used in the fumigation of skins. The uses are remote from one another, but there is a general similarity in form, namely of a saucer or bowl mounted on and moulded in one piece with a cylinder, and in the presence in the base cylinder of apertures with no apparent use. There is the further similarity that the East African and some of the European specimens showed perforations triangular in shape. Thanks to Dr Stone himself and to information and introductions furnished by a friend, Mr N. Teulon Porter, it has been possible to consider a wider range of material, part of which weakens and part of which strengthens the analogy, and which at the same time brings these and other objects nearer to one another in distribution.

The European examples are considered first. The Chassey culture of the second millennium B.C. in central France contains as one of its components two forms of *vases supports*, the one cylindrical, the other with a superimposed saucer. Both were found at the type and other sites, but the cylindrical form is dominant in eastern France and the saucer form in the west. The usual size is between 5 and 8 inches, top diameter, and $2\frac{1}{2}$ to 5 inches in height. At a later date in the west, these objects were adopted by the megalithic peoples, apparently for ritual or funerary purposes. At the site of Er-Lannic, an island in the Gulf of Morbihan in Brittany, and in a series of sites in Jersey, almost all the objects found have a ritual association. But this is not to say that a domestic use may not have continued. At Er-Lannic, for example, where the objects were found in a fragmentary state in small stone-built chambers in close juxtaposition to the menhirs of a circle of megaliths, they were mixed up with domestic objects, such as stone and flint

implements, querns and other pottery fragments in soil and ash. An East African parallel can be found in the pots or sherds which are commonly found at Mohammedan and other graves. It is nevertheless a fact that these ' pot-stands ' have not been found in a domestic setting in western France, while in the east they have.

At Er-Lannic, V. le Rouzic excavated no less than 60 chambers and, among well over three-quarters of a ton of pottery fragments, was able to identify 162 as *vases supports*, 80 being of sufficient size to enable reconstruction of the whole form. Among these 80, 70 were of the saucer type and 10 cylinders. Of the 70, 10 contained perforations of different shapes in the base cylinders (4 triangular, 4 rectangular and 2 circular). The perforations were cut with care, some of the lines being curved and some of the rectangles having rounded corners. Le Rouzic, in his description, assumes that the holes were to assist in picking up the objects, but more than half of those with holes had such a general form as to be easily grasped by the upper edge, while the circular holes and some of the rectangular ones were narrower than is convenient to a finger-tip. And if they were for this purpose, why were they not more general ? There may, of course, have been holes in a number of objects of which only fragments remain, but in many of these the likelihood is precluded by the form of external ornament. Nor can the holes have had anything to do with better firing, since pottery is fully dried before it is fired. Perforations, again, are present in 3 of the 10 cylinders, two being rectangular and one diamond-shaped. In no case are the perforations associated with any particular size or shape of object and they may thus have been purely decorative.

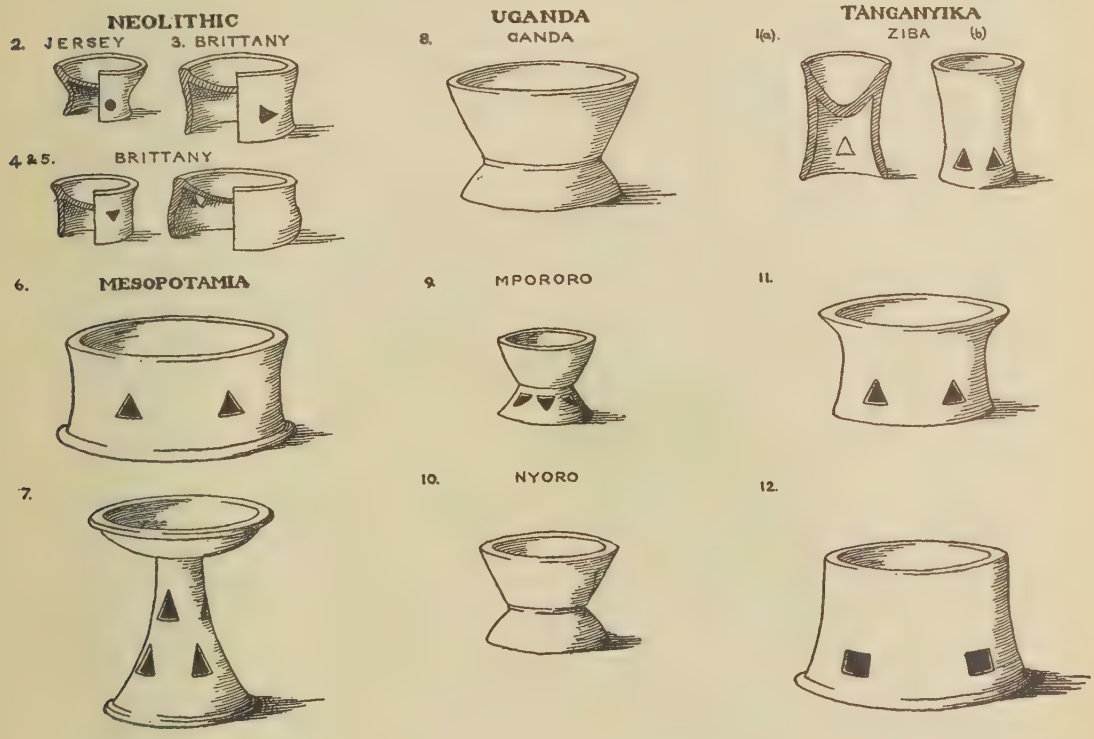
From Jersey, Mrs J. Hawkes records, in her *Archaeology of the Channel Islands*, Vol. II, 33 such objects, of which all but one are saucer-type and all but two were found on funerary sites. Several of these were definitely charred on the upper surface, showing a use other than that of a pot-stand : others equally definitely were not, however, and the original unskilled discoverers of two at one site are said to have found pots on them, though this of course is not conclusive evidence of use. Out of 13 which were complete or present in large enough fragments to enable reconstruction, 5 had holes, all round, in the base cylinder. One of these and three of the Er-Lannic objects are featured in illustrations 2 to 5.

Mrs Hawkes considers that the Chassey culture spread from the south of France and cites references to *vases supports* from Guevaux in Switzerland and Almeria in Spain. To these is to be added another from Minorca, published by Professor Margaret Murray in *Man*, 1924, p. 105 (I am indebted to Dr Stone for the reference). The form thus reaches well into the Mediterranean.

A final European reference which I have only at second hand, in a MS. communication from Mr Teulon Porter, appears in a German publication *Wohnraum Hausrat*, a handbook written and illustrated by Otto Völchers. Mr Porter says that this contains a description and illustrations of small objects strongly resembling *vases supports*, found in Bronze Age graves in Silesia. Some of those illustrated present the features of an upper and a lower compartment, the lower containing one or more holes. These are said to have been thought at first to have been for burning incense, but are now considered to be models of charcoal cooking stoves. Dr Stone has kindly looked at the book, which I cannot do on account of absence in East Africa and writes ' there seems no question that the illustrations of the so-called " Ofenmodelle " recall in a very marked manner our vase-supports. If as stated they come from Middle-Late Bronze Age graves of the Lausitz culture it would seem that they must be derivative or collateral '.

Before East African occurrences are discussed, mention must be made of triangular perforations in pottery objects of a comparable period from Asia. These come from

verbal and MS. communications from Sir Leonard Woolley. In Mesopotamia he has found simple cylinders, i.e. without the upper saucer, which vary in diameter from 6 to 12 inches and some of which present triangular perforations (ill. 6). These are classified as pot-stands, but a number of larger ones, found on the floors of houses, have traces of fire in them, suggesting a secondary use as stoves, the holes then having a purpose, of radiating heat. Larger objects of the same general type, ranging from 15 to 24 inches in diameter, and many again having triangular perforations, were found piled on top of one another as linings of shafts made as domestic drainage pits and here the perforations



might have had a use for assisting soakage. These are assigned to the period 1750–1500 B.C. Contemporaneous is another form where a saucer is set on a hollow base, narrow at the top and widening to the bottom, this base again presenting, and now for no apparent purpose, a number of triangular perforations (ill. 7). The saucer sometimes shows traces of burnt oil or fat and may have been a lamp, therefore. From further north, from the Acropolis at Carchemish, Sir Leonard has furnished photographs of a number of roughly similar objects, which for the purposes of classification are termed ' champagne pottery '. One of these, the saucer of which is some 7 inches in diameter and the whole thing some 10 inches high, contains a series of triangular slits in the stem, all the others being plain. The horizontal side of the triangle is at the top, while in the Mesopotamian specimens it is at the bottom. From further west at Atchana in Syria, Sir Leonard has shown illustrations of nine pot-stands, all except one of which is a simple cylinder, while

the one may present the combination of cylinder and saucer. Two of these have circular perforations. These are of a slightly earlier period, 2000–1750 B.C.

A number of additional occurrences of the East African form have come to light. Mr G. W. B. Huntingford, of the London University School of Oriental and African Studies, has furnished sketches from Buganda and Mpororo in Uganda and Ruanda respectively. The former of these is imperforate, while the latter has triangular perforations in the base (*ill.* 8 and 9). These are 12 inches in diameter by 8 in height and 6½ by 5 respectively and the saucers are much rounded. Roscoe, in *The Bakitara*, illustrates in Plate XXIX one from Bunyoro, Uganda, 9 inches by 6½ (ill. 10), and substantiates Kollmann's description of skin-smoking by illustrating and describing a conical wicker frame, two to three feet high, over which was spread a barkcloth, derived from a species of *Ficus*. The purpose was to free the barkcloth of insects by fumigation, a soft wood being used on what was in fact a stove to give off a sweet-smelling smoke. In Kiziba, Bukoba District, Tanganyika, Kollmann's record is paralleled by that of an object illustrated by Rehse in his *Kiziba ; Land und Leute* (though in error upside down) and described as a stove. The base of this (ill. 11) contains four triangular holes. In Kiziba again, Mr D. J. Powell, District Officer, found in 1950 such a stove still in use in a hut at the entrance to the courtyard of the chief, providing heat for his retainers. I also was able to examine this object later. It is some 15 inches in diameter and 9 inches in height (ill. 12). It has four square holes in the base, between which and the saucer there is no communication. The users did not know why the holes were there : but they did in fact use them for moving the stove, a proceeding most intelligible in view of the heat of the rim. They remembered the smaller type used for fumigation before cloth supplanted the skin and barkcloth, referring to it as *kishwa*, the small stove, as distinct from their own *rushwa*, the large stove. I also ascertained by enquiry that similar stoves were formerly in use in Buzinza, the most southeasterly area of the lacustrine culture.

The use for fumigation is substantiated by a communication from Mr Huntingford. Mentioning occurrences in Somalia, with specimens in the museum at Mogadishu, he says that the stove is there used by women, who fill the upper part with aromatic substances among charcoal and then stand over the stove in order to perfume themselves. This use I corroborated again in a small shop in Dar-es-Salaam, Tanganyika, where Arabs have for sale shallow pottery bowls with perforated lids. These are imported from the Persian Gulf, together with aromatic resin from the *Ud* tree (not identified) and are used for the same purpose.

The coincidences of form and perforation are too slender and the distribution in space and time without intervening links too wide to base on them a hypothesis of a common origin of the objects discussed. The perforations in particular may be mere casual decoration, such as can easily be sliced out of wet clay with a knife. But at least the suggestion arises that the saucer-type *vase support* of Western Europe may have had other purposes, and actual East African ones have been demonstrated. And to the probable North African derivation of the West European neolithic culture, there are to be added the known communication over a long period between the Persian Gulf and the East African coast and the indication of a northern origin of the culture of the lacustrine chiefdoms of East Africa. The latter is supported for what it is worth by a tribal tradition of one of the Bukoba chiefs, which asserts boldly that the first of his line came from Egypt.

R. DE Z. HALL.

Illustrations

Drawings to common scale of about 1 : 11, derived from :—

1. Kollmann, *Victoria Nyanza*, fig. 120, reduced.
2–5. Illustrations in Antiquity, vol. 23, p. 216, reduced.
6–7. Sir Leonard Woolley, sketches, reduced.
8–9. G. W. B. Huntingford, sketches, enlarged.
10. Roscoe, *The Bakitara*, Plate xxix, enlarged.
11. Rehse, *Kiziba, Land und Leute*, p. 17, reduced.
12. D. J. Powell, sketch.

[Incense is still commonly used today in the Sudan in many of the villages, chiefly for the purpose of driving flies out of the rooms, but also because its smell is pleasant. Charcoal is burnt in the saucer and incense scattered on it ; the charcoal is made to burn more brightly by fanning with a straw fan or with the hand. The base of the vessel has triangular perforations which are, in my opinion, certainly intended to radiate heat ; the saucer becomes much too hot to hold, while the base remains relatively cool. This handling is required because the vessel is usually filled with glowing charcoal from a fire in the cook-house and carried to the living-room. During my recent tour in the Sudan I bought an incense-burner and used it regularly, so that I was able to test this explanation of the purpose of the perforations by experiment. One might hazard the guess that the ritual use of incense in burial-rites was an extension of its domestic use and originally had the same purpose ; once established it persisted long after that purpose was forgotten. O.G.S.C.]

ANOTHER FIND OF MANUSCRIPTS IN PALESTINE

The caves on the shores of the Dead Sea have produced yet another set of ancient writings, quite distinct from the first and at another place. The facts are recorded by Mr G. Lankester Harding in a short but appetizing article in the current *Palestine Exploration Quarterly* (May-October 1952). Before describing them, however, it is necessary to enumerate the sites concerned, to avoid confusion. (1) The original discovery of what have hitherto been called the Dead Sea Scrolls was in a cave called Qumran (map reference : 1932, 1282), and it is proposed in future to call them the Qumran Scrolls. (2) About half a kilometre south of the first site is a small inhabited site called Khirbet Qumran, where, as Mr Harding thinks, lived the people who put the scrolls in the cave about A.D. 70. (3) At a distance of seven hours' walk S.E. of Bethlehem are some caves in the Wady Muraba'at (1936, 1277) where the new finds have been made. These are to be called the Muraba'at Manuscripts.

Khirbet Qumran, excavated by Mr Harding, consisted of a main building (37 × 30 metres) with outlying rooms. ' Sunk into the floor of one of the rooms was a jar identical with most of those found in the [Qumran] Scrolls Cave '. On the floor beside it was a coin of about A.D. 10, and numerous other coins range from this date to about A.D. 67. On this evidence the Scrolls themselves are now given a *terminus post quem* of about A.D. 70. This agrees well with the central date of the radiocarbon test whose range is 167 B.C. to A.D. 237. The site may be identified with a settlement of the Essenes ' above Engeddi ' mentioned by Pliny. This identification is supported by the presence of a unique cemetery of more than 1000 graves.

Wady Muraba'at contains four caves whose contents ' will have a vital bearing on the dating of the [Qumran] Scrolls '. They are protected from rain and full of a fine

dust, embarrassing to the excavators but excellent in preserving perishable materials. Cave II produced most of the ' unique papyrus and leather manuscript fragments '. The bulk of them were found in rats' nests. Archivists usually curse the rodents which nibble at manuscripts, but here they may well have to thank them for unwittingly preserving what would otherwise not have survived. The deposits were stratified ; at the base was an undisturbed chalcolithic layer with Ghassulian sherds ; then came one with remains ranging from Chalcolithic to the Iron Age ; and at the top one with sherds of the Chalcolithic and Iron Ages and the 2nd century A.D.

The documentary material ' is closely dated in the 2nd century A.D. ' ; it ' consists mostly of letters and business documents, with a very few fragmentary pieces of biblical books, Genesis, Exodus and Deuteronomy. One document in Greek, a marriage contract, is dated in the seventh year of Hadrian, A.D. 124 ; another Greek document is an agreement for a loan. There are also fragments of what appears to be a literary composition, possibly historical, in a very beautiful book hand, though much of the [other ?] material is written in a cursive hand, and is very difficult to read.

' Among the Hebrew material are several fragmentary copies of what appears to be the proclamation by Simeon ben Kosibah of the second revolt of the Jews, against Hadrian . . . Coins of the second revolt (A.D. 132–135) confirm the dating. Another interesting piece is a phylactery, written on a torn strip of thin leather in tiny but very clear characters. It was rolled up and enclosed in another piece of leather which had been torn or cut from some Greek manuscript . . .

' A very curious find was a leather bag which upon examination turned out to be made of two sheets of a Greek or perhaps a Latin manuscript. The writing is very faint, and it has not yet been possible to read it ; infra-red photography is being called in to help in the interpretation of all the documents. There are several cases of palimpsests, one of which is in the early Phoenician type of script . . .

' There is no connection of any kind between this series of caves and that in which the Dead Sea [Qumran] Scrolls were found. The latter was a depository for a library in times of trouble, whereas the Muraba'at caves were dwelling places. The nature of the documents from the two places emphasizes this, and they are further widely separated in both space and time ', but of course the later find will have an important bearing upon the earlier one when there has been time to study it fully.

The same number of the *Quarterly* contains an article by Dr Birnbaum on the Hymns Scroll from Qumran which on purely palaeographic grounds he dates to the end of the 1st century B.C. or the beginning of the 1st century A.D.—a conclusion which is in full agreement with the new evidence summarized above.

Mr Hamilton has an important and most interesting article on the topography of Jerusalem in the 4th century A.D. and on the degree of confidence with which we may accept the traditional identification of such famous sites as Golgotha and the Holy Sepulchre. Nehemia Zori produces evidence that the ancient site of Endor was a small tell beside the Wadi Ein es Safsafa, one kilometre N.E. of Indur—whose name, transferred from thence, preserves that of the ancient one. Finally, Miss Kenyon contributes a long and fully illustrated preliminary report on the excavations at Jericho in 1952, supplementing the one already published in ANTIQUITY.

The Editor is to be congratulated on producing a really first-rate number of the *Quarterly*. We have also to thank him and the bodies responsible for publishing it (the Palestine Exploration Fund and the British School of Archaeology in Jerusalem) for permission to quote the above extracts and to thank Mr Harding also for his consent.

EXCAVATIONS AT GLASTONBURY ABBEY, 1952

Excavations at Glastonbury Abbey were restarted in 1951 under a joint Committee representing the Society of Antiquaries and the Somerset Archaeological Society (ANTIQUITY, XXV, 213); a second season of four weeks was carried out in July and August, 1952. The range of Saxon buildings, running north and south and located in the previous year, was further explored. It is now known to extend for at least 150 feet and at the north end reaches to within 60 feet of the Saxon church. A further trench 20 feet nearer the church disclosed no trace of the building. In its place was part of the cemetery, including slab-built graves of a primitive appearance. One of the graves lay under the floor of the 12th century cloister, which had disturbed the enclosing stones. The filling of this grave yielded a coin of Edward the Confessor and fragments of late Saxon pottery. The level at which the burial occurred was so high that the surface of the contemporary cemetery must have lain at least 3 feet above the adjacent buildings, thus confirming the statement of William of Malmesbury that St. Dunstan raised the cemetery up as a mound that it might be removed from all surrounding noise (*Vita Sancti Dunstani*, 17=Rolls Series: Memorials of St. Dunstan, 272). This arrangement appears to have continued till the end, for though the west walk of the 12th century and later cloisters cut across the edge of the cemetery, there is no trace of a west range in this area, an omission difficult to explain in an abbey of the importance and wealth of Glastonbury. Further west, but still apparently within the bounds of the ancient cemetery, the east wall of the Chapel of St. Michael was located. The masonry is late medieval, but it is hoped that the interior which lay outside the area explored will provide evidence of the earlier building suggested by the dedication. Also within the area of the cemetery were post-holes dug into the natural clay of the subsoil. These were demonstrably earlier than the 10th century, but sufficient are not yet located to form a plan. Their size suggests that they may belong to early buildings of wattle, perhaps of the same age as the ancient wattled church of St. Mary, which survived till the fire of 1184. It is intended to continue the exploration of the cemetery in 1953.

C. A. RALEGH RADFORD.

RINGHAM LOW—A CORRECTION

Since writing our note on the identification of Bateman's Ringham Low (ANTIQUITY, March 1952, pp. 41–3), we have had the opportunity of examining Bateman's MSS. diaries, along with Llewellyn Jewitt's original water colour sketches of the sites excavated by Bateman, including Ringham Low[1]. These sketches, from which Jewitt's published line drawings were taken, must claim a very high authority in any discussion of the tomb. They show that in two important details our own description must be amended.

1. There is no authority for our statement that the southern side of Chamber I was missing when Bateman dug it, or for our suggestion that it should be reconstructed to parallel the northern side, i.e. as one long slab overlapping a shorter block. It is clear from Jewitt's sketch that what we have called Bateman's ' reconstruction ' (*loc. cit.*, fig. 2) represents the chamber as Bateman actually found it. Its lack of symmetry makes it, of course, all the more remarkable.

[1] These valuable MSS, which are being studied in detail by Mrs Margaret Fowler, were shown to the Sheffield meeting of the Prehistoric Society through the courtesy of the Director of the City Museum, Sheffield. The sketches of Ringham Low are on pp. 42a, b of T. Bateman, *Illustrations of Antiquity*.

2. The stones used for the side and end slabs of this chamber, including the odd squarish stone at its northeast corner, are roughly uniform in height. We may take it then that Bateman's figure for the depth of the chamber—3 feet 6 inches—does represent the general height of the side slabs above the floor. Our suggestion that the corner stone, overlapped as it is by a side slab, was in fact a tall ' pillar-stone ' comparable to those at Five Wells and Minning Low, is now seen to be groundless.

It follows that Ringham Low does not, in fact, belong to the distinctive Peak type of chambered tomb which can be seen in both chambers at Five Wells and in the central chamber at Minning Low. If a parallel is to be sought in Derbyshire, it is with Green Low, near Aldwark; but neither this tomb nor Chamber I at Ringham Low are sufficiently determinate in form to make morphological comparisons profitable.

LESLIE and ELIZABETH ALCOCK.

Reviews

FLINT QUARRIES : the Sources of Tools and, at the same time, the Factories of the American Indian. *By* KIRK BRYAN. *Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University, vol.* XVII, No. 3 (1950) : *pp.* 40, 20 *text-figures*, 1 *plate. Published by the Museum at Cambridge, Mass.* $2.00.

The late Professor Kirk Bryan has done a most valuable service to archaeology in reviewing the evidences which are to be obtained by studying the flint quarries of the American Indian, for they have a most important bearing on primitive economics. He was at pains to refute the view of W. H. Holmes, that flint quarrying as practised by American aborigines was, like modern quarrying, purely an extractive industry.

According to Holmes' view, the quarried masses were reduced to a form—the ' blank '—which was transported elsewhere for later re-working into usable shapes such as predominate on village sites. Apart from stone-working tools, the material on quarry sites consists, according to Holmes, of waste flakes, broken blanks and other rejects. Bryan, on the other hand, maintains that the so-called ' blanks ' are mostly discarded bifaced axe-heads, which, when broken in working timber, had been frequently put to use as cores for the production of scrapers. He found that some quarry sites abound with utilized flakes and all sorts of roughly finished implements suitable for working wood and bone. He therefore infers that flint quarries were the factory sites for the manufacture of a wide range of implements. He points out that transport of stone for long distances is much more difficult under primitive conditions than the transport of wood and bone, and that, since the fashioning of utensils from these materials on a large scale requires quantities of flint tools, it is probable that flint quarries would commonly be the scene of several industries. The reduction or transformation of a mined product is only likely to have been carried out far from the quarry when there were ready means of transport, or when the particular material required was only available in regions where food supply was very limited.

Bryan says the fact that siliceous stone is more tractable when it is freshly quarried can be used as another argument against the theory of ' blanks '; although in this connection Holmes offered an interesting explanation of some of the caches of flint bifaces which have been found from time to time. He suggested that they were ' blanks ' which had been buried to retain their ' quarry water ', and therefore ease of working. Bryan admits that the American Indians sometimes traded flint and made use of ' blanks '. For instance, he quotes the discovery of two caches of grey flint in New Mexico. One cache consisted of 44 finished implements ; but the other, comprising 14 pieces, included rough ovate bifaces, which he says ' might justifiably be considered " blanks " ', and two nodules, ' one flaked just enough to show the clear grey flint underlying the surface crust, as though to give the buyer an idea of its value '. These caches were 200 miles from the outcrop of Triassic flint in Texas whence they had been carried.

Some of the author's arguments are unconvincing, and one is left with the feeling that one theory has been countered by another, when they are not quite mutually exclusive. However there are many facts and notions in this monograph which will prove useful to Old World prehistorians, particularly those who are studying Neolithic axe-head factories

and the attendant trade. The student of Palaeolithic industries will also find points of interest. It may not surprise him that utilizable flakes struck from broken bifaces on Indian quarry sites include both Clactonoid and Levalloisoid forms.

KENNETH P. OAKLEY.

HISTORY OF THE PRIMATES. *By* W. E. LE GROS CLARK. *British Museum*, 1949. *Illustrated*, 112 *pp. and bibliography. Price*, 2*s* 6*d*.

This excellent handbook is one of the series of guides to the Department of Geology published by the British Museum (Natural History) and is the companion volume to *Man the Tool-Maker*, by Dr K. P. Oakley.

Professor Le Gros Clark calls his book an 'Introduction to the study of Fossil Man' and he has given us a very satisfactorily complete introduction. He does not make the mistake so many writers on scientific subjects make of assuming too much knowledge on the part of his readers, with the result that the most callow student could read this book with profit and pleasure.

The opening pages are devoted to a rapid but comprehensive survey of man's position in the animal kingdom and the classification of that kingdom with a brief outline of the history of the system of classification. Then follows a history of the evolutionary theory, the evidence in support of evolution and a description of the use of fossils in tracing evolutionary history. Professor Le Gros Clark then explains the time scales used by geologists and palaeontologists in their study of fossils, and shows how from a study of the bones and teeth, preserved as fossils, palaeontologists are able to reconstruct extinct forms, and how the bones and teeth can be used for comparative purposes to demonstrate the process of evolution.

Only then, when the necessary basis of general knowledge has been firmly laid does the author come to the primates themselves. He traces their development from ancestral mammalian forms, through various stages and side lines up to Homo Sapiens. More detailed discussion is given to the various fossil Hominidae and fossil apes, in particular the very interesting Australopithecinae and a chapter is devoted to the Pleistocene period and the origin of Homo Sapiens. A useful bibliography for further reading is given at the end.

An interesting observation, which alone would serve to raise the book from the realms of a mere guidebook towards those of philosophy, occurs in the discussion of modern evolutionary trends which point to a modification of the brain of man. The author reminds us that if man cannot learn to live peaceably with his fellows his very highly developed intelligence may cause him to follow the example of other groups of animals who have in the past gained ' a temporary ascendancy by an exaggerated development of some particular structural mechanism. He may become extinct '. This would seem to be a peculiarly apt note on which to end a study of, largely, extinct forms.

The book can be unreservedly recommended as an enjoyable and thought-provoking form of scientific reading which will prove of value not only to the student but to the general reader, who may perhaps not wish to study the subject in minute detail but who desires a sound general knowledge of it written in a readable way. For the expert it forms a conveniently condensed outline of present knowledge on the subject.

The illustrations are clear and excellently documented, and a real attempt has been made to place them in their appropriate positions in the text—very refreshing in these days when most other considerations have to give way to those of economy.

Once again the British Museum should be congratulated on its choice of author and the excellence of its production. J.D.C.

THE LASCAUX CAVE PAINTINGS. *By* FERNAND WINDELS. *Faber and Faber. London*, 1949. 136 *pp. Profusely illustrated with photographs and colour plates. Price*, 42*s.*

To those who have not been privileged to visit the painted cave of Lascaux in the Dordogne Department of France no mere book of photographs or descriptive account can even begin to convey the deep, almost spiritual, experience which the sight of these paintings affords. Part of the wonder of such a visit is due to the excellent preservation, display and lighting methods adopted by the French authorities. The original mystery and beauty of the caves are faithfully preserved and the lighting is used solely to illumine the paintings. The entry into the cave and the first sight of the magnificent painted frieze looking as fresh as if it had been executed only yesterday affords one of the most breathtaking spectacles of life, both to the layman and to the prehistorian.

The best substitute is undoubtedly the photographs of M. Windels. M. Windels, who as the Abbé Breuil says in his personal note at the beginning of the book, was one of the first to visit and photograph the cave of Lascaux, has sought to portray the wonder and beauty of these ancient paintings so that those less fortunate may share in the experience of a visit to them. In this he has succeeded so far as anyone could succeed in so difficult a task. The many excellent photographs with which the book is illustrated serve to provide the reader with a mental picture of the paintings and engravings in the cave, and the plates in colour reproduce very faithfully the colourings of the originals.

M. Windels takes his readers as one might say, on a tour of Lascaux. We start in the little town of Montignac, traverse the smiling countryside to the cave and then are led expertly through the various passages and caverns, seeing the paintings as we go until again we leave the cave and re-enter the open air.

M. Windels elicits the aid of Mlle. Annette Laming, of the Department of Prehistory, Musée de l'Homme, in a short account of the geology and chronology of the paintings, a discussion of the craft and techniques employed in their execution and of what is known or can be conjectured as to their significance, magical, religious or artistic.

In a work of this nature it is of course not possible, and perhaps also not desirable, to go at very great length into questions of age and period, but certain inconsistencies are immediately apparent. As Professor Hawkes, the translator, mentions in his preface, there is not at Lascaux any great mass of excavated material and data on which conclusions could be based with any degree of finality. Most of the conjectures as to age and period are based on points of style, which while being strongly suggestive cannot be considered conclusive—rather like the dating of stone implements on a purely typological basis! Perigordian is the age to which the Abbé Breuil assigns these paintings, but one disconcerting fact pointed out by the author and his collaborator is that the styles of Lascaux can be made to fit into either the Perigordian or the Magdalenian, according to the classification of the Abbé Breuil. And the difference in time between the Aurignacian–Perigordian, given by Zeuner as 100,000 B.C. (*Dating the past*, 2nd Edition, 1950, p. 202) and the radiocarbon date for Lascaux, 14,465–12,665, B.C. (*Archaeology*, IV, 1. Spring, 1951, p. 56, quoting *Chicago Nat. Hist. Mus. Bull.*, vol. 22 no. 1, Jan. 1951, pp. 6–7), is so great as to make it imperative that a great deal of further detailed work should be done on this question before any final pronouncement is ventured upon. At the moment the question must be regarded as non-proven.

The great merit of the book lies not in any learned discussion of scientific problems, though the author and Mlle. Laming have been eminently successful in outlining these for their readers, but it lies in the provision of a comprehensive pictorial record of one of the wonders of the world. In and through the photographs and descriptions of M.

Windels the paintings of Lascaux will ' come alive ' for countless readers who may never see them in the flesh, and for those who are more fortunate they will provide a valuable record to reawaken the experiences of that never to be forgotten visit. Through these photographs, so well conceived and so excellently reproduced, we can, as Monsieur A. Leroi-Gourhan says in his introduction, have a vision of the men who made the paintings and can perhaps penetrate just a little into the workings of their minds.

It is as a pictorial record that M. Windels' book excels and as such we should congratulate him on a first class production. J.D.C.

THE HERITAGE OF EARLY BRITAIN. *By various members of Cambridge University. G. Bell and Sons*, 1952. 12*s*.

Lectures do not always come well through the ordeal of printing, nor do all of these. But there are some good things in all of them, and we can hardly have too many books which interpret the work of specialists to the intelligent public. This is therefore the sort of book that will appeal to all readers of ANTIQUITY. There is a plan to the book ; it starts with an essay by Dr Glyn Daniel on the peoples of prehistoric Britain. There follows one on their mode of life by Dr J. G. D. Clark. Mr de Navarro is, as ever, both stimulating and learned in his discussion of the Celts and their art. There follow essays on the Roman occupation by the late Rev. M. P. Charlesworth, who organized the lectures and to whom the book is dedicated ; on the Celtic West by Mrs Chadwick ; the Foundations of England, by P. H. Blair ; and the Norman Conquest by E. Miller. The Editor, the Rev. M. D. Knowles, completes the Heritage after the manner of a Greek chorus.

The names of the contributors are a guarantee of the goods provided, and if there are occasional deviations they mostly relate to things that are still controversial or matters of opinion. I still adhere to my original thesis that the Late Bronze Age was introduced by invaders, not traders, for the reasons given when the thesis was propounded (p. 27). Traders do not create new types of earthwork and pottery. The implied definition of barbarians (top of p. 178) as people whose emotions and sensibilities and imaginations were not as keen as ours is one that Professor Childe would probably not accept, and it is too subjective and question-begging to be of use to the archaeologist and historian. Were the Greeks barbarians because they lacked our power of appreciating beautiful scenery ? Are artistic cannibals and head-hunters barbarians ? The suggestion (pp. 185–6) that certain European developments would not have influenced England but for the Norman Conquest is the purest speculation. England would have been spared the influx of Norman barons who endowed monasteries with land often taken by force from the legitimate holders and who often robbed the monasteries also of their land ; but is there any reason to suppose that the more desirable European cultural influences, which flowed in steadily throughout the Saxon period, would not have continued to infiltrate and vitalize our culture ? England is geographically open to such influences, and has been so since prehistoric times ; they do not need to be forcibly introduced. The great school of Northumbrian art was not introduced by conquest, and some of its roots were in the eastern Mediterranean. As Professor Knowles admits, it is both impossible and unprofitable to speculate about what would have happened if the Norman Conquest had not taken place. But to argue ' post hoc, ergo propter hoc ' is not surely very different ; and it is a matter of opinion whether certain alleged results of that conquest were, in fact, as the context implies, desirable elements of European culture. By a similar process of reasoning one might argue that they led ultimately to the Reformation. O.G.S.C.

IRON AGE CULTURES IN SOUTHERN RHODESIA. *By* Roger Summers; Presidential Address to Section E of the S. African Assoc. for the Advancement of Science, delivered at Salisbury, July, 1950. *Printed in the South African Journal of Science, November*, 1950, *pp.* 95–107.

This is an attempt to see as a whole the various cultures which occupied S. Rhodesia between the end of the Stone Age hunting regime (or rather its supersession) and the political extinction of native African rule in 1893. The treatment is purely archaeological, representing the application in a new and untilled field of a discipline which has successfully recreated European prehistory. The resemblance holds good even in details, and we find our old friends Iron Age A, B, C and AB reappearing, with of course other connotations, in the southern hemisphere. Iron Age A, originating perhaps in the north, is poverty stricken, and dated somewhere in the 1st millennium of this era. B is rich and ostentatious, with ' decorated stonework, immense walls, highly ornamented polychrome pottery, gold and bronze ornaments, carved ivories and imports from Europe and the Orient '. Mr Summers thinks that ' the much publicised "Empire of Monomotapa" may have borne our B1 culture. If this hypothesis is correct, Iron Age B1, which was in decline in 1506, probably arrived here during the 14th or 15th century '. The building of the ' acropolis ' at Zimbabwe is placed in the 15th century, and of the ' temple ' in the 17th. Mr Summers is ' convinced that our great monuments are African in execution and that the dwellers therein were racially akin to our modern natives; on the other hand some of the *ideas* underlying the culture probably had a foreign origin and may have been introduced by non-Africans '. A sane and sound opinion, based on fact not fancy and uninfluenced by political and racial bias. The treatment is equally commendable; there are distribution-maps of stamped wares, ruin wares, pre-European mines and stone buildings, and a chronological table clarifying the facts and conclusions reached. It is fascinating to watch the Advancement of Science being achieved in a new land by methods tested and proved in the old ones; how much more fascinating than the hokus-pokus about King Solomon's mines which still befuddles the ignorant and credulous! Great things are being achieved for South African prehistory by the few, but the many have not yet begun to realize it. O.G.S.C.

FOUR HUNDRED CENTURIES OF CAVE ART, *by* Abbé H. Breuil; *translated by* Miss Mary E. Boyle; *realised by Fernand Windels—Centre d'Études et de Documentation Préhistoriques, Montignac Dordogne, France*, 1952. *Price not stated but ascertained to be £7.*

The Abbé Breuil, doyen of Old Stone Age archaeology, has a secure place in the ranks of the great pioneers. It is just half a century since his life's work began; he has virtually created the study of Quaternary art, whose definitive recognition dates only from 1902 (see fig. 335), and he has become a legend in his own lifetime, which has been wholly devoted to the advancement of learning. He is no arm-chair student (see fig. 235), and his field-work has covered most of the Old World. His work in other related branches of archaeology—the study of implementiferous drift-deposits and the typology of *art mobilier*—has been equally distinguished; and it is often forgotten that one of his earliest efforts was a masterly survey of the Bronze Age remains of the Paris Basin. Such a record of disinterested devotion has earned, and received, the gratitude and homage of his fellow workers everywhere, and of the many pupils he has inspired and trained.

This book is a corpus of the cave art which Breuil has studied in Europe, chiefly in France and Northern Spain. It will be a long time before anyone else arises with the same profound knowledge, and it is most useful to have Breuil's mature opinions in this

convenient form. These advantages outweigh the book's many defects, for which we expect the Abbé is not directly responsible.

It begins with a dithyrambic Foreword (misprinted ' Forewords ' in the List of Contents, at the end of the book) addressed to a ' very ancient young girl ' whose portrait adorns a rock in South Africa. Then follows a brief history of the subject, with dates of some of the more important discoveries from Altamira in 1879 to Lascaux in 1940. The next 472 pages on the Origins of Art contain many valuable remarks on interpretation which are, however, themselves often difficult to interpret. The first paragraph ends in the air, with a lost relative pronoun, and the thirteenth consists of a single involved and quite unintelligible sentence of 125 words. The translation of the last two paragraphs effectively and tantalizingly conceals Breuil's views on the connection, if any, between Upper Palaeolithic and Neolithic art. A section on the Age of the Painted Caves has an ungrammatical paragraph-sentence of 113 words. Breuil is sceptical of the value of radiocarbon dating for the cave period, and even regards some of the dates (unspecified) thus obtained for the English post-glacial Mesolithic as little less than absurd. That surely is going too far ; one of them at least—that putting Star Carr in the 8th millennium—is just what one would have expected on other grounds. Long before radiocarbon, some of us considered that the absolute dates given to the Upper Palaeolithic were far too high ; radiocarbon dates confirm our scepticism and are on the whole consistent. But it is still too early for dogmatic statements.

The illustrations are the most important part of the book. They are partly photographic and partly from drawings made by Breuil or copied therefrom by his collaborators. In several instances both drawings and photographs of the same picture are reproduced; and in a few of these there are considerable divergences. If we compare the photograph of the Altamira bison (fig. 17) with the drawing (fig. 9) we see on the photograph three rather indistinct broad lines immediately behind the forelegs ; on the drawing one of these is represented as an extra foreleg but the other two are omitted. The forelegs themselves are seen in the photograph to have a marked foreward thrust ; in the drawing they seem to hang limp and at a different angle to the body. The drawing represents the horn as S-shaped, but the photograph shows the upper part quite differently, with no trace of the upper curve. The drawing of the muzzle shows more than the photograph, but of course in this case more may be visible on the original than the reproduction shows. This drawing differs in many minor details from the other smaller one on the coloured plate (fig. 3).

This coloured plate is certainly deficient in other respects. Comparing it with fig. 2 we find that on the former the mouth and nostril, beautifully clear on the photograph, are a mere smudge, and the face as a whole is very badly drawn. The left foreleg (as seen by an observer) is perfectly clear on the photograph but grossly miscopied on the drawing, which misrepresents it as extending into the dewlap in an anatomically impossible manner. The other foreleg is also very inaccurately drawn.

The most glaring disagreement between drawings and photographs is in fig. 130, where on the same page are reproduced both a drawing and a photograph of the so-called ' Sorcerer ' of Les Trois Frères. Though the photograph is only $3\frac{1}{2}$ inches square and rather indistinct, it reveals a palpable error in the delineation of the arms. On the photograph these are represented by dark slightly curved bands, continuous from the shoulder to the hands, and there is no bend at the elbows. On the drawing there is a sharp right-angle bend at the elbow. The body-markings are miscopied, the portion showing white being made too narrow in proportion to its width, and being made to continue into the arm, which the photograph shows quite plainly that it does not.

These discrepancies are serious because it is the drawings and not the photographs which are most commonly reproduced, and it is from the drawings that most people form their opinion of the art of the cave-men. That may be unfortunate, but it is so; few can see the originals. The pictures are admittedly difficult subjects for photography, but that merely places an additional responsibility on the draughtsman and on the artist who copies the original drawings. The Altamira bisons and the so-called ' Sorcerer ' have appeared in many text-books. We now find that we have been misled in certain cases where comparisons can be made and the drawings checked, and we naturally wonder how often we may have been misled in cases where no such comparisons are possible.

But while it is always difficult (though far from impossible) to secure good photographs of these time-worn paintings, those cut in the rock or hardened clay should be quite easy. Fig. 163, a bison at Niaux, ' one of the finest known examples of this sort of engraving on clay ', is either badly out of focus or over-enlarged from a small negative; we suspect the former. The lighting was excellent when the photograph was taken. What a pity thus to spoil so fine a work of art by so elementary a fault! Fig. 524 (Levanzo) is equally lacking in definition, though an easy subject; and so are several others. When we think of the skill and money lavished by publishers of ' glossies ' and sales-catalogues on the art of later periods, including the present, it seems odd that man's earliest efforts should be thus maltreated.

We have already mentioned some obscure passages in the text; unfortunately it has many other defects, chiefly in editing and translating. Errors that should have been corrected in proof abound: Lybian, frescœs, ockres, monographies, absurb, Gravetian, one thousand millions years. Pages 254 and 255 have three illustrations and four captions! One is given two figure-numbers (283 and 285) though it forms a single picture extending across two pages; this occurs elsewhere, but not consistently. The caption, too, is very awkwardly divided between the two pages. But a worse example is on pages 150–1 where another picture is similarly divided; the left part is called ' fig. 114 ' and the right part ' fig. 115 (ctd.) '. The divided caption ends with a full stop in the middle of a sentence, giving it an absurd appearance (' Below, a bird on a sort of.'). Fig. 235 (which is a lovely picture of four generations of archaeologists) is also divided (inevitably) between two pages, but is not, like the last mentioned, given two different figure-numbers. The captions are printed on pp. 230–1, but transposed, the continuation *preceding* the first part instead of following it. The wording of the captions is haphazard and whimsical, following no sort of system. Fig. 153 (Niaux) is described as ' Pretty little black horse '; ' fig. 323 (contd.) '—which is really fig. 322 continued—is a ' beautiful Horse '; but it would need a good judge of horseflesh to distinguish the prettiness from the beauty. These epithets are unnecessary in what should be an objective presentation of facts. We do not need to know what the caption-writer thinks about horses. We do however need an orderly and correct system of numbering, and we also need (but are not given) figure-numbers inserted in the text at the appropriate places. To do this means a lot of drudgery, but that is what nine-tenths of the making of books is.

This editorial slovenliness is equalled or even surpassed by the gaucheries of translation. Throughout, the French idiom is retained, once even keeping the inverted order of words (' arabesques " macaroni " ', p. 22). On the same page ' wall art ' is said to have ' sprung of that contemporary branch, the decorating of small objects '. On p. 45 (which has several misprints) we read about lines cut ' with a pecking by a sort of pick relatively heavy, but which might be a quartz pebble or a flint core '. On p. 21 the second sentence has a singular verb and a plural subject (' there exists . . . human groups '). To counterbalance this, on p. 24 a singular subject has a plural verb, with an

historical present thrown in for good value. Someone, on p. 16, ' accomplished himself of this task '. Sentences are often separated by a comma only. And so on.

The expression ' Reindeer civilization ' is not one that commends itself. The word ' civilization ' cannot be used of hunting groups which flourished (according to the author) at least fifteen thousand years before Christ. The proper and accepted term in English is ' culture '.

These criticisms cover the style of the text, which is a translation, and the quality of the illustrations. To what extent the drawings reproduced on the plates are Breuil's originals depends upon the meaning of the word ' realize ' in the title. We suspect that it covers a multitude of minor, but of course unintentional, divergences, inevitable in the copy of a copy. Nevertheless, our dominant feeling is one of gratitude in getting so much from Breuil's own hand (in the text) and so many photographs reproduced in a readily available form. One can feel nothing but admiration for the courage with which the master has shouldered the ' great duty . . . of trying to publish, in these exceptionally difficult times, the study of European graphic art to which I have devoted fifty years of my life ' ; and we hope that nothing we have said will discourage the intention to publish ' complete monographs of several of the decorated caverns, copied by [Breuil] and still unpublished '. O.G.S.C.

ARCHAEOLOGY IN THE FIELD. *By* O. G. S. Crawford. $10 \times 7\frac{1}{2}$, *pp.* 272 33 *pls. and* 44 *figs. London : Phoenix House*, 1953. 2 *guineas.*

This handsomely produced book, whose purpose is ' to draw attention to the chief things that a person interested in archaeology will meet with rambling over the countryside ', is a notable addition to the already substantial body ot authoritative archaeological literature which has been written, primarily for the general reader, within recent years : it is to hoped therefore that the rather high price will not preclude it from obtaining the wide circulation that it deserves. After tracing the development of antiquarian studies in Britain, Dr Crawford follows the pattern of his own admirable little pamphlet on *Field Archaeology*, originally published for the Ordnance Survey in 1932, and devotes separate chapters to each of the various classes of ancient monuments which the field-worker is likely to encounter, e.g. prehistoric tracks and Roman roads, megaliths and round barrows, huts and houses, native camps, linear earthwortks, Celtic fields, Roman earthworks, medieval castle mounds and parks, and even such relatively infrequent and little-known remains as those of quern-quarries. Not only are the principle characteristics of these monuments described, with copious references, but much sound, practical advice is given on how to detect and record them. The importance of making the fullest use of maps, air-photographs and any available documentary sources is continually emphasised ; and, from his wide experience of field work in other lands, Dr Crawford culls many interesting parallels between the cultures of prehistoric and present-day primitive peoples. Although the greater part of the material contained in these chapters will be familiar to scholars, much useful factual information is presented for the first time in the appendices which deal with such varied topics as dene-holes, meres, defensive linear earthworks (including a topographical survey of Wansdyke), and an evaluation of the present state, and future prospects, of field archaeology in Africa.

Inevitably, Dr Crawford's own researches and predilections occupy a dominant place in the book. Thus, while the principles of detection and recording which he enunciates are of general application, the bulk of the examples of British monuments cited in the text are drawn from Wessex ; and, as he freely admits, he is more at home with prehistoric and medieval earthworks than with Roman. Although a few exceptions

occur, it is misleading to state (p. 180) that entrances to Roman forts are defended by traverses, and the fact that a few (but by no means all) Roman fortlets appear to be oval rather than oblong on plan is simply due to the subsequent spreading of the ramparts. These minor blemishes, however, in no way detract from the merits of the book as a whole. Those who are acquainted with Dr Crawford's writings will not need to be told that the style is forthright, and eminently readable, and that his observations are directed unerringly to the heart of the matter. For the uninitiated, it will be sufficient to quote his advice to the student of African ceramics : ' To get an idea of the local wares it is a good thing to study them at the cemetery, where there are always some on the graves. This is easier than doing so in the village itself and attracts less attention '. K. A. STEER.

DISCOVERING THE PAST. *By* JACQUETTA HAWKES. *Local History Series, no.* 8. *Published by the National Council of Social Service.* 13 *pp. and* 12 *plates.* 2*s.*

This is an attractively produced pamphlet. There are eleven pages of clear half-tone reproductions of nearly a hundred well-chosen objects, from palaeoliths to a medieval pot and sherds—it was a good idea to show both. Another plate has an air photo and a ground view, but of different kinds of site. The text explains summarily various types of site that can be discovered accidentally and how to look out for them, and does the same with objects, classified by material. Mingled with this there are useful words of advice and warning. Some additions and improvement might be suggested : it is a pity to use 2 out of 13 pages to repeat the captions of the plates ; but the reporting of finds to museums and societies might well be put at the beginning as well as the end ; it is far too bald to say that gold and silver objects are Treasure Trove ; crop-marks are not mentioned in the text—nor are they or ' the old surface ' explained ; the value of middens and structureless habitation sites is also omitted ; Samian *is* glazed, not polished ; the difference between horizontal and vertical might be made clearer in the ingenious diagram at the end, showing crop-marks and crops, and plans and sections of the underlying features. An exhortation to go and see actual things in the local museum would have been worth some lines.

It is, however, doubtful how far the pamphlet will serve its declared purpose of reducing the numbers of finds that fail to reach the ' experts ' and ' at the same time offering to those who want it the enjoyment of training their eyes and judgment in the service of history '. A cheaper leaflet such as has been prepared for gravel and sand workers would be more likely to reach those concerned with housing-sites and agriculture, who are the most liable to unearth archaeological material. And even in this age of digests the pamphlet can hardly be said to be adequate to the most elementary ' training ', while for instruction and mental stimulus it is poor value compared with *Prehistoric Britain* for the same price. R. B. K. STEVENSON.

CONTRIBUTIONS TO THE ANTHROPOLOGY OF THE FAIYUM, SINAI, SUDAN, KENYA. *By* HENRY FIELD. *University of California Press* (*Cambridge University Press*). 9 × 6 *inches, pp.* 352. *Price* 4 *dollars.*

This book is, presumably, intended primarily for the physical anthropologist. It consists mainly of tables of anthropometric data and statistics relating to the inhabitants of the districts visited, with some account of their living conditions and, in the case of Sinai, some notes on the archaeology and history of that area. A bibliography is included in each section but no maps or photographs are provided.

Dr Field was himself most interested in the Sinai peninsula because he hoped there to obtain data which would link up with observations he had made during the past quarter of a century in Jordan, Iraq and the Caucasus. As a result of his work he now traces a chain of surface palaeolithic sites from the Suez canal to the Caucasus, and he also concludes that ' the modern dwellers on the land bridge between Asia and Africa appear to be close physically to the ancient Proto-Mediterranean of southwestern Asia and to the basic Mediterranean type of this area '.

The author spent only a limited time in the Sudan and that in the northern part. He collected measurements from a group of men near Wadi Halfa, from another near Khartoum, and from two more at Abu Hamed, an intermediate point. He gives the relevant figures but observes regretfully that the groups were too small for any valid statistical conclusions to be drawn. There is an account of the ancient site and rock drawings at Abka on which Mr Oliver Myers was working at the time and which Mr Myers himself has not yet published ; there are also notes on potsherds and stone implements picked up on a few surface sites of the kind which are to be found in large numbers in the northern Sudan. Still, Dr Field has at least seen these things for himself ; it is when he ventures into fields of which he has no first-hand knowledge that he stumbles. He quotes (with acknowledgment) from Sudan Government reports, and in adapting these extracts he makes numerous errors, some of them ' howlers '. Much of this second-hand material seems to have been somewhat perfunctorily included and is in any case irrelevant to the purpose of the book. Is it really a contribution to anthropology to quote figures showing the number of private pumps in the northern Sudan in 1937 or the tonnage of imported dates in 1936, and other statistics of a similar kind ?

In Kenya, groups of Masai were the subjects of investigation. As an appendix to this section there is an English-Masai phrase book and vocabulary. F. Addison.

CITY OF SHEPHERD KINGS, *by* Flinders Petrie, Kt., *and* ANCIENT GAZA V *by* E. J. H. Mackay *and* Margaret A. Murray. 42 *pages*, 50 *plates* + 2 *in colour*. *British School of Egyptian Archaeology* (Bernard Quaritch), 1952. *Price*, £2 10*s*.

This is a record of the excavation carried out by the British School of Egyptian Archaeology at Tell el Ajjul (Ancient Gaza) in Palestine in the spring of 1938. The ' troubles ' in that unhappy land had already started and the excavators did not escape them ; their camp was burnt to the ground. The excavation was not only the fifth and last on that particular site ; it was also the last of that much longer series upon which that great Egyptologist, Sir Flinders Petrie, was ever engaged. It may, perhaps, seem strange that no reference to this fact is allowed to appear in the book and that nowhere is there any suggestion that the hand which wrote much of the report and drew many of the plates has been still these ten years past.

The title, *City of Shepherd Kings*, represents an intention ' to inform a larger public of Flinders Petrie's five-year examination of a site ranging through the periods of Canaanite, Middle Kingdom, and Hyksos domination '. There is, however, no section under this title specifically written for this larger public, and such summaries as appear are to be found as interpolations in the record of the latest excavation. They show the sequence of events at Ancient Gaza to have been, first, an occupation of Canaanites who laid out a large fortified camp and built a palace within it, and who, it is thought, later entered Egypt to found the VIIth Dynasty. After some centuries of desolation the site was occupied by the Egyptians of the XIIth Dynasty ; later still there were two Hyksos occupations separated by a comparatively short interval, and, last of all, another Egyptian occupation during the XVIIIth Dynasty. By this time the bed of the Wady Ghazzeh had

become silted up and the stream which formerly flowed along it had dwindled into a series of stagnant pools. These formed ideal breeding places for malaria-carrying mosquitoes which rendered further habitation impossible.

The present report is mainly concerned with the remains of the Hyksos period ; it is divided into two parts preceded by a short introduction by Lady Petrie. Part I was mostly written by the master himself and contains notes on the excavation and descriptions of the objects found, amongst which were included gold ornaments. Some of these were amuletic figures of mother goddesses in sheet gold, and they provide material for a chapter on their mythology. Part of the gold was discovered in the form of a pedlar's hoard, similar to one found in 1934, and this, together with the profusion of small weights which were found, led Prof. Petrie to conclude that gold was traded for some valuable commodity of small bulk such as spices from the Hadhramaut.

Part II contains a description by Dr E. J. H. Mackay of the actual excavation and gives details of the building remains. This is followed by an interesting chapter by Dr Margaret Murray on Beliefs and Ritual as disclosed by the amulets and by the evidence of horse-sacrifice. There is also a report by Miss Elinor W. Gardner on a traverse down Wady Ghazzeh, and a short description by Mr Carl Pape of a number of ruins near Amman which the expedition visited after leaving Tell el Ajjul. F. ADDISON.

THE BURDEN OF EGYPT. *By* JOHN H. WILSON. *The University of Chicago Press* (*Cambridge University Press*), 1951. 318 *pages*, 73 *half-tone illustrations*, *end-paper map*. *Price*, 45*s*.

The relevance of the title of this book is somewhat obscure. It is taken from the book of Isaiah, where there are to be found a series of denunciatory chapters severally headed ' The burden of Moab ', ' The burden of Damascus ', ' The burden of Egypt ', and so on through the list of the enemies of Israel. This usage of the word ' burden ' is now obsolete, and some versions of the old Testament offer, as an alternative reading, ' An oracle concerning Egypt '. Professor Wilson is neither denunciatory nor oracular ; he is speculative, and he has written, he says, ' not a history of ancient Egypt but rather a book about Egyptian history '. He is concerned less with historical events (though they are all set down) than with the psychology of the Egyptians and with their religious, intellectual and political development. The form which this development took is fundamentally due, it would seem, to the fact that the ancient Egyptians, isolated in their narrow valley, lacked any sense of time or any realization of the relation of cause and effect. To them, events and phenomena had no cause; they just happened at the will of the gods. They had, in short, no scientific curiosity. In his treatment of his subject the author regards Egypt as a living organism, so that the First Intermediate Period becomes ' The first illness ' ; the Second Intermediate Period is ' The great humiliation ', and at the end Egypt is the Biblical ' broken reed '.

Professor Wilson follows Frankfort in refusing to accept Toynbee's views on the growth of civilization, or Childe's theory of the Urban Revolution, as fully applicable to Egypt. He also rejects Flinders Petrie's thesis, that nearly every new epoch in Egyptian history was due to the influence of intrusive foreigners, on the ground that it ignores the physical isolation of the country and the possibility of internal change. In his view there was no actual invasion of Egypt at the end of the VIth Dynasty. ' Rather the state collapsed from internal strain, the frontier was left undefended, and a steady trickle of displaced Asiatics seeped into the Egyptian delta '. Were they, it may be wondered, ' displaced ' from the large Canaanite fortified camp which Petrie unearthed at Gaza on the Egyptian border and which was abandoned about that time ?

This is a long, discursive, and also a thoughtful book, but it is admittedly ' a book of random questionings ' and to some of these there can be no final answer. It can be read with interest, but at the end the reader may feel, a little uneasily, that he is still not quite sure why Egyptian civilization rose so rapidly, endured for so long, and finally collapsed. F. ADDISON.

ENKOMI-ALASIA. *By* CLAUDE F. A. SCHAEFFER. *With contributions by* R. DUSSAUD, H. J. PLENDERLEITH, O. MASSON. *Paris*, 1952. *Price*, 9800 *francs* ($28).

This is the first volume of the report of the French Archaeological Mission and Cyprus Government Joint Mission to Enkomi, a well-known prehistoric site inland of Salamis in Cyprus. It describes the French campaigns of 1946–50, and will be followed by those of Dr Dikaios, the Keeper of the Cyprus Museum.

Enkomi is the native village (*Nea Kome*) which sheltered the Greek population expelled by the Turks from Famagusta in 1571. Famagusta (*Ammochostos* ' Sand-choked ') was the port south of the Pediaios river, which succeeded sand-choked Salamis, the Hellenic and Roman city, north of the estuary, which had itself succeeded a Mycenaean city about two miles inland, and half a mile from the modern Enkomi. The Bronze Age site overlooks a small tributary, sheltered on the east by the escarpment of a limestone plateau which dips eastward into the coastal sand-dunes of Salamis. To north, south, and west it had a massive wall, and most of the area was full of buildings, with one imposing ' Achaean ' palace built about 1350 B.C., burned about 1100 B.C. and completely destroyed about 1050 B.C. Of an earlier town, without Mycenaean contacts, only the rich chamber-tombs remain, going back to about 1500 B.C.; and burials went on among the later houses to the end.

The tombs had been surreptitiously plundered before the diggings of the Cesnola brothers (1865–78). The British Museum opened rich tombs in 1895, the Cyprus Museum made a short reconnaissance in 1913, tracing the town wall; but was defeated by the chaos of plundered foundations immediately below cultivation level. The Swedish Expedition (1934–5) devoted its attention mainly to tombs, thinking the foundations Byzantine. Only in 1934 did Dr Schaeffer recognize their prehistoric age and the significance of the site as the insular counterpart of the Mycenaean establishment at Ras Shamra on the Syrian coast, which he was already exploring. Most prudently he concerted operations with the Cyprus Department of Antiquities, so that larger areas might be excavated in so extensive and complex a site. On the data so collected, M. Réné Dussaud, formerly Director of the Louvre Museum, and chief French exponent of Mycenaean civilization, has stated a very strong case for the identification of Enkomi with Alasia, an important state in Hittite and Egyptian archives, and an emporium for copper and other industrial goods.

Dr Schaeffer groups his material round a few crucial problems, building up an archaeological construction to its historical corollaries. First, the threefold stratification of the site, first detected in 1934, from Middle Cypriote II–III, 1900–1600, which has a different orientation, through Late Cypriote I–III, 1530–1225, the ' Achaean ' settlement with fine square masonry, to a catastrophe at the end of Late Cypriote III, and reoccupations in Cypriote Iron Age I, 1200–1050. To the last-named belongs the foundry with its characteristic copper ingots of the later shape familiar from Knossian tablets.

Chapter II discusses a hoard of bronze implements, including a characteristic axe-adze of wide western distribution; peculiar engraved seal-stones and cylinders, also of early iron age; a gold-encrusted statuette of the Egyptian god Atum of Heliopolis;

and graffiti on a wall-block, showing a chariot and a sailing vessel such as were used by the Sea Raiders under Ramses III.

Intact tombs of several periods (Ch. III) provide an outline chronology for the whole duration of the city, confirming the inroad of Mycenaean pottery about 1450 B.C. (tomb 15, Late Cypriote I); the employment of variegated glass and blue glaze for toilet vessels (tomb 5, lower level); and the custom of cranial deformation; with some interesting evidence for the succession of the later and degenerate Mycenaean pot-fabrics.

In Ch. IV are discussed the remarkable foundations in squared limestone which cover the whole area between two streets near the gateway in the eastern escarpment: they represent a palace built between 1350 and 1250 B.C., and occupied continuously till about 1200 B.C. In the general catastrophe of the Sea Raids it was burned, but soon reoccupied (1225–1175) and subdivided into dwellings and workshops, with a bronze-foundry, and simple degenerate pottery (Late Cypriote III ware). Dr Schaeffer accepts Rowton's reduced date for the Sea Raids (1163 B.C.) and also, with reservations, the earlier date (1350 B.C.) of J. Berard and other French scholars for the Trojan War and the Minoan dynasty in Crete. The reoccupation stratigraphy is complicated, and involves questions as to the relations of the decadent sub-Mycenaean pot-fabrics. There seems to have been an earthquake about 1100 B.C., felt also at Sinda, up the Pediaios valley and at Curium on the West coast. The general insecurity explains the hurried burial of domestic treasures: a bronze statuette-throne, whose original occupant had been detached, was found with a replacement in one place, and the original figure in another (Ch. V). A single jug of the 'close style' points to the arrival of a distinct body of invaders, perhaps from Rhodes; and rather later the 'granary style', first recognized at Mycenae, became prevalent.

All this throws new light on the documentary history of Alasia in its long intercourse with the Lykki of Asia Minor, with Egypt, and with the Hittite Empire, and on the Greek legend of Kinyras, already discussed by Dussaud. The frequent floods in the reoccupation period correspond with a general deterioration of climate about 1150. The final destruction Dr Schaeffer seems to ascribe to the Dorians of Peninsular Greece.

The fine silver cup from tomb 2, inlaid with bulls-heads and flowers in gold and niello (black enamel) is fully described by H. L. Plenderleith of the British Museum, who has restored it most skilfully. It is figured in coloured plates borrowed from the *Illustrated London News*, 23rd May 1952.

Five balls of clay, incised with Cypro-Mycenaean signs, supplement those found by the British Museum excavators. Their script is related to the Minoan of Crete, and also to the 'Classical Cypriote' of historic times.

At the end of the volume is a convenient summary in English, with a full bibliography.

Dr Schaeffer is greatly to be congratulated on this lucid and full interpretation of a peculiarly complicated and tantalizing site. And there is still to come his Cypriote colleagues' share of the whole expedition. JOHN L. MYRES.

PREHISTORIC EUROPE: THE ECONOMIC BASIS. *By* J. G. D. CLARK. 350 *pages*, 16 *plates*, 180 *text illustrations*. *Methuen*, 1952. £3.

The economic aspect of the history of civilization is nowhere so obviously in need of investigation as in the sphere of prehistory. The tremendous progress made between the origins of humanity and the beginning of written history certainly requires analysis just as much as do the manifold problems of chronology, group-formation, historical inter-relationships and such like. We are apt to forget that our great heritage from

prehistory is primarily the expression of particular economic and cultural patterns, and that it therefore must tell us much about those who made it. True, there are many articles dealing with special problems of the history of civilization proper, with the form and evolution of particular tools, with the distribution of particular cultural traits, with certain sections of industry. But attempts to make a large scale synthesis are rare. This is quite understandable in view of the magnitude of the task of reconstructing the economic background leading up to the historical period in Europe. Not the whole history of civilization is involved, for no account is taken of the history of typology or of religion. The basic principles of the scientist are necessarily quite different from those of the historian ; but he has nevertheless to master the whole of his material.

Dr J. G. D. Clark, who now holds the professorship of prehistory at Cambridge University, has presented us with the results of his research. His work on the history, and particularly the economic history, of civilization has long been well known. He has always devoted special attention to the somewhat neglected aspects of materials and function. Inevitably some of his published work reappears in this book. Only one who has for years been assembling his facts could be entitled to undertake a work of these dimensions.

The arrangement of the facts is one of the greatest difficulties confronting the author of a book like this, for they do not fall into shape automatically. The author might review the main periods of culture in chronological order, distinguishing the phases of hunting (catching and collecting) and farming. Within these phases he might treat the various economic systems as a whole. This is broadly the author's method. He has therefore had to indicate to which cultural group each of the facts he mentions belongs, without assembling the specific characteristics of the individual cultures so as to provide a balanced picture of the whole. The second and far more difficult method, which would have revealed the gaps in our knowledge, would have been to start from the great cultural groups, and not only emphasize their common elements but also, far more, the differences in their economic structure. Though I think this would have been the more interesting approach, I can well understand why Dr Clark in view of existing conditions preferred to adopt the first method, for otherwise his book would have had to be much bigger. The careful reader will be able to collect for himself many details of the different cultures.

Looking through the book one is struck by the number of the distribution-maps. Apart from the plates they form about one fifth of all the illustrations and show how much reliance the author puts on this important instrument of research which is still so often neglected in many works of synthesis. The number of maps of the northern regions equals those of the whole of the rest of Europe. This may well be because the former area is that of the author's own special studies, as well as because in southern Europe statistics of finds are too few for more economically interesting maps. This point yet further underlines the difficulty of the task. We feel sure that the material selected for illustration has been very carefully screened. There is much that is well known—how could it not be so—but also much new material published for the first time.

No detailed discussion is here possible of the wealth of material or of the problems raised in the book. On the other hand, the author must have been fully aware of the impossibility of expounding in 300 pages everything that could be said of the economic pattern of Europe and of the verifiable ideas belonging to it. He had to choose just enough to reveal the framework of his ideas. The reader might of course ask for more, but that is usually not a bad sign for a book.

The general plan is clear. Dr Clark considers first the economic bases indicated by the natural configuration of Europe, investigating oecological zones and economic

phases. His partition of Europe into three self-evident zones according to climate and the consequent botanic regime (evergreen Mediterranean, deciduous temperate and coniferous northern) really puts an obligation upon the author of giving equal attention to each and of dealing fully with their respective peculiarities. It would seem that the south has come off rather badly in this respect.

The first chapters deal with the two principle forms of economy in prehistoric times—hunting and farming. Here too he distinguishes quite rightly between the zones, namely, between inland and coastal regions. He devotes much attention to the tools used for catching and collecting, clearly without attempting to make a complete survey even of the main types. In any case, for instance, he has not as a rule attempted to catalogue the hunting and catching tools of the Bronze Age. The distribution maps, on the other hand, dealing with particular types—I would mention only the tread-trap—are of immense value. Dr Clark very rightly deals with the importance of hunting not only for hunters but also for farmers, investigating the proportion of wild and domesticated animals used as food in the farming phase, based upon the bone remains found. In this branch of research we still have to expect many new revelations.

Hardly less interesting are the chapters on forest clearance, cultivation, crops and livestock, which contain much valuable information. Here the author had to confine himself to a few examples—in the interesting problem, for instance, of prehistoric fields ; and he has obviously chosen only the really important ones. The keeping of livestock is evidenced by finds of animal bones on occupation-sites. I am not yet quite convinced that the selection of pigs or sheep for breeding is primarily determined in all zones by the environment. Recent finds in Switzerland seem to point in another direction. But what Dr Clark says about the importance of the species in each region and period is undoubtedly all one can say at the present time in a brief survey. The conclusions drawn from the food-habits of man provide in many respects guiding principles for prehistoric research. The fact has been established that there occurred great changes in food-habits, and this raises the question : What about the need for salt and sugar ? Salt was certainly systematically obtained from Neolithic times onwards. The place of sugar was obviously taken by honey, and we can measure the amount available and consumed by the great quantity of wax needed for casting bronze. But beekeeping proper has so far not come to light. The chapters concerned with the economics of nutrition have demanded much detailed research on the collection and arrangement of evidence from rather inaccessible publications. A much easier task was the survey and assessment of the now abundant evidence available concerning house-forms and settlements. Dr Clark gives only typical examples, and it is to be regretted that he has not here too provided maps showing the extent of our knowledge.

Much space is necessarily given to the manifold problems of technology. Not only the working up of the raw material is involved, but also the manner of its acquisition. The most important materials dealt with are stone, bronze, iron, clay (pottery), bark, wood, skin and leather, bone and horn, fibre (plaiting and weaving), dyes. Here too the reader will find an excellent survey of essential facts, based both upon what has been preserved and upon what could only be inferred. The section on wood seems to be rather thin, in view of its extraordinary importance in daily life and of the frequently erroneous ideas of experts.

Individual groups could obtain much of their raw material only by means of trade. Others were capable of surplus production—the primary condition of export. Dr Clark illustrates this chapter by some very interesting maps, those of large areas being outstanding in this respect. Trade is not possible without traffic and transport, and

there are land-routes and sea-routes. The means are ships, wheeled vehicles or sledges, and carts, the latter associated of course with draught animals such as oxen and horses, each having their own historics.

Many readers will be particularly grateful to the author for the detailed list of books and articles used, which forms an excellent guide for all dealing with these problems.

E. VOGT.

GEOLOGICAL EVIDENCE OF THE ANTIQUITY OF MAN IN THE NEW ZEALAND AREA. *By* G. LESLIE ADKIN. *New Zealand Science Review*, no. 4, 1952, 41–5.

Islanders are naturally interested in their earliest ancestors; but many islands, including Britain and the Channel Islands, were not islands when they were first occupied. The New Zealand islands, however, were, and the arrival of Man there was quite recent. The last immigration in force was that of the Fleet in or about A.D. 1350; it started in the Society Islands reaching New Zealand via the Cook Islands. Another party went northwards at about the same time and colonised Hawaii. (The recently published radiocarbon date for an early site there, range A.D. 824–1196, seems to indicate an earlier immigration[1]). It has long been suspected that at least one immigration into New Zealand took place before 1350; and now Mr Adkin, a professional geologist and author of a book on place-names,[2] has published evidence in support of that hypothesis. His evidence is geological, and concerned with deposits related to land-elevation and vulcanicity. Adkin postulates two pre-Fleet invasions of people once called Moa-hunters[3] whom he calls Waitaha. These are marked by two shore-lines with middens at distances of 25 and 65 chains from the present coast line. Calculations based upon progressive sedimentation (progradation) give a date of 300 B.C. for the oldest; and although this may be too early, a date 'very much earlier . . . than has hitherto been attached to human immigrants to [New Zealand] has much to warrant it'. A radiocarbon test would be extremely interesting, especially if samples from *both* old shore-lines could be submitted.

O.G.S.C.

DEVONSHIRE STUDIES. *By* W. G. HOSKINS *and* H. P. R. FINBERG. *Jonathan Cape*, 1952. £1 16*s* 0*d*.

The art of making local history readable has almost died out. It was practised by Freeman in the last century, but today the writings both of the learned and of the ignorant are in this sphere too often unreadable, though for different reasons. Yet there are many articles in the proceedings of local societies which are not only learned but also readable. That such are seldom collected and published in book form may be due to the pressure exercised by the other sort which squeezes them out. How interesting such a book can be is proved by this one which was read with pleasure by one reader who knows nothing of Devonshire or its history; how much more then should it be appreciated by Devonshire folk! Part of its merit is that, while not attempting to write a history of the county, the book does touch on so many aspects thereof that one acquires a knowledge in the reading. The first chapter, on the Making of a Boundary, contains an admirable original account of Dark Age history in the extreme west. That on the Making of the Agrarian

[1] *American Antiquity*, XVII, 16.

[2] Reviewed in ANTIQUITY, XXV, 1951, 64–5.

[3] See ANTIQUITY, XXIII, 1949, 172–9.

Landscape is a valuable pioneer effort in a field hitherto cultivated chiefly by geographers whose historical equipment is too often inadequate for the task. We are shown what a rich harvest awaits the student who can interpret maps (and air photographs) in the light of historical knowledge and experience in the field. The chapter on the Open Field in Devon is an expanded version of an article first published in ANTIQUITY, and is an important correction of current conceptions. An interesting minor revelation (on p. 37) is that gifts made to religious establishments ostensibly for charity, for the love of God and the souls of relatives, were sometimes in actual fact paid for. There are 11 beautifully drawn maps and plans, and some equally attractive photographs of high merit by Mr F. L. Attenborough. The publishers have produced the book well and we commend it unreservedly to all our readers (including librarians everywhere). In spite of its title it is of far more than merely local interest. O.G.S.C.

CHINA RECONSTRUCTED, the bi-monthly magazine of the China Welfare Institute, *edited in Peking, published in Shanghai*; no. 4 *July-August* 1952, *pp.* 13–18, 'New Archaeological Discoveries,' *by* HSIA NAI, 16 *figures.*

This is a summary of results reached apparently in 1950 and 1951. The chief work was carried on at An-yang in Ping-yuan (a small new Province cut off Honan) and at Liuliko, Kuweitsun and Hueihsien, fresh sites 50 miles to the S.W. All began with tombs and other remains of the Yin dynasty and came down to the Former Han, just about A.D. The results were very rich, but mostly such as we know already; presumably the positions of objects in the tombs were now carefully registered. Most remarkable were chariots (fig. 3) of the time of the Contending States, 700–250 B.C.; we have long had splendid bronze fittings, even inlaid with gold, but this time the wood has been preserved and the illustration looks as if the bodies and wheels (with 26 spokes) could be perfectly reconstructed. Tombs at Hueihsien of the 3rd century B.C. contained tools and weapons of iron such as were disregarded in the plundering digs of former decades. In 1949–51 Chou-kou-tien was again explored and more relics of 'Peking Man' and his tools discovered. Interesting neolithic material was found near Hsianfu; it is claimed for it that it lessens the likelihood of Western connections for the painted pottery. Excavations near Changsha in Hunan are said to be the first to throw light on the culture of the Ch'u state and that of the southern part of the Former Hans, but I am told that this is not so. It is also claimed that here were found the earliest known bamboo slips with writing. There were also well preserved boats (fig. 15) and chariots.

Near Nanking, tombs of the Five Dynasties (10th century A.D.) with good paintings were explored. Finally the elaborate mausolea of the concubines of two late Ming Emperors illustrated the splendours and miseries of the Imperial harem. The report is full of edifying propaganda. The great thing is that wooden and iron objects, which have never attracted antique dealers, were carefully saved and skilfully dealt with. E.H.M.

ROMAN POLITICS, 220–150 B.C. *By* H. H. SCULLARD. *Oxford at the Clarendon Press*, 1951. 30*s net.*

In the introduction to this scholarly work Dr Scullard quotes the exclamation of Sir Robert Peel in 1835: 'Damn the Whigs, they are all cousins'. The structure of society implied in this remark finds its parallel in Republican Rome from the early 2nd century B.C. onwards, when the mixed patricio-plebeian governing class exercised a

monopoly in the highest offices almost as exclusive as that of the patricians in the preceding age. Professor F. Münzer in his work *Römische Adelsparteien und Adelsfamilien* published in 1920 set the fashion in the investigation of the interrelationships of these powerful families in the late Republic. How far the course of events was actually determined by the close personal obligations among the ' nobiles ' is a question on which scholars have differed very widely in their estimates. Most, however, would agree that the effects were considerable. Professor Syme, who made brilliant use of the prosopographical studies of Münzer in his book on the Roman Revolution, says of the close of the Republic : ' A feudal order of society still survived in a city state and governed an empire. Noble families determined the history of the Republic, giving their names to its epochs. There was an age of the Scipiones : not less of the Metelli '.

Dr Scullard in this volume attempts to construct the political grouping of the most prominent families and their influence on the course of events in the period 220–150 B.C., which roughly corresponds with the life of Cato the Censor. The limits to such an enquiry are imposed by the fact that the extant books of Livy, our primary source, cover only the years 219–167 B.C., and even so, little is known of the subordinate figures except their names and the civil or military offices which they held. By a careful examination of this rather arid material Dr Scullard constructs the groups which formed about the outstanding figures of the time, Scipio and Cato, and traces the rise and decline of particular families and the part they played in political movements.

By skilfully relating the prosopographical material to the general course of events Dr Scullard sets the life of Cato, who has found no full scale biographer, into the political background of his age, particularly from the point of view of how a ' novus homo ' fitted into the scheme of family politics. In spite of the detailed character of much of the material the book is very readable, and contains a wealth of research, not only in the text but in a number of appendices on ' Sources for senatorial politics ', ' Notes on Cato's speeches ', and other topics. Scholars will welcome this valuable contribution to the history of the period. G.F.F.

A GUIDE TO THE HISTORY OF SCIENCE. *By* GEORGE SARTON. *pp.* XVIII, 316, *no plates*. *Chronica Botanica Co., Waltham* 54, *Mass.* (*London, Wm. Dawson and Sons*). 1952. $7.50.

This book is more or less a sequel and elaboration of Sarton's earlier *Study of the History of Science* (Cambridge, 1936) and a much needed one. It is also, as he explains in the preface, an ' offspring of the series Isis and Osiris ' and hence he proposes to refer to it in future as ' Horus '. Like its illustrous patron this new Horus leads us to victory over the forces of chaos.

Sarton, himself the acknowledged master in the field of the history of science, has always stressed the necessity of proper information and research on the available evidence before embarking on new studies. He has often given his valuable time to handbooks which compile this information for the benefit of the students of history of science and technology who can in their turn serve the historian and archaeologist.

Unlike the original Horus whose one eye was damaged by his enemy Seth the champion of darkness, this new Horus has two clear and illuminating ' eyes ' or parts. Through the one, which consists of three lectures on science and tradition delivered at University College in 1948, the future student of the history of science can look into the workshop of the master and the more expert student can glean many ideas from one who has worked in this field for many decades.

The second ' eye ' gives a picture of the books which are the keys to any field which a historian of science might need. It informs him not only on books, but also on societies, organizations, congresses, periodicals, institutes, museums and libraries and thus will cater for both the student and the expert according to the author's wish expressed in his preface. Again Sarton has enriched our literature with a book that will weather the storms for many years together with his monumental Introduction to the History of Science. R. J. FORBES.

THE ARCHAEOLOGY OF THE SANTA ELENA PENINSULA IN SOUTH-WEST ECUADOR. *By* G. H. S. BUSHNELL. *Occasional Publications of the Cambridge University Museum of Archaeology and Ethnology, vol.* I, 1951, *Cambridge University Press, pp.* 155, 5 *plates*, 52 *text figs. Price*, 42*s.*

This well-written report is the first modern monographic treatment of archaeology on the Ecuadorian coast. Careful typological definition, chronological segregation, and comparative analysis have begun, at last, in one of the most crucial of the American areas. The field work was carried out by the author in the late 1930's in Guayas Province on or near the Santa Elena Peninsula and the town of La Libertad. Dr Bushnell has projected his findings against a background of Ecuadorian coastal archaeology as seen by such predecessors as Saville, Uhle, Dorsey, and Jijón y Caamaño. It should also be mentioned that E. N. Ferdon, Jr., followed Bushnell in the La Libertad sector and will soon present a report that should supplement this one.

The Bushnell chronology for Santa Elena is ably and clearly presented. It is based only indirectly upon vertical stratigraphy, but, given the nature of the available evidence and the methodological procedures, it appears sound. His earliest period is designated tentatively as *Pre-Guangala.* Although Bushnell found ceramics of this period only in horizontal isolation, a key to the sequence relationship was given by Ferdon who identified Pre-Guangala sherds as having stratigraphic priority to Guangala types in nearby excavations. The second period is the *Guangala* and the third the *Engoroy.* Engoroy grave units often contain mixtures of Engoroy and Guangala types while, in contradistinction, Guangala refuse contains no admixture of Engoroy styles ; hence, Engoroy is considered the later of the two. The *Manteno* is the fourth and may be the last pre-Columbian occupation of southern Guayas.

Although Bushnell presses no strong claim for one-to-one correlations with Jijón's disputed chronologies, there are a number of correlations and cross-ties which support the Ecuadorian scholar. The pottery of Proto-Panzaleo I and Pre-Guangala is similar, and Guangala reflects traits of Proto-Panzaleo I, II, and Tuncahuán. Terminally Jijón's Manteño is essentially the same as that from Guayas. These comparisons are made with the Jijón chronology for Manabí, the coastal province lying just to the north of Guayas ; but the three earlier periods (Proto-Panzaleo I, II, and Tuncahuán) are also represented in the highland Chimborazo sequence. All of this, as Bushnell is well aware, needs much more checking by detailed stratigraphic studies in both coast and highland regions. What Bushnell's data do bring out is this. Jijón y Caamaño, by whatever methods, had factored out a number of styles and elements from the welter of Ecuadorian archaeological materials which he had arranged into a chronological order. His inability to marshal convincing evidence to prove his ordering has left his results upon to deserved scepticism, and the assemblages or ' cultures ' which he formulated may have contained some materials in improper context as Collier and Murra (1943) have pointed out ; nevertheless much of what he did seems to have been on the right track as the Santa Elena excavations indicate.

I have read with interest, Bushnell's sections attempting archaeological-tribal correlations, and it seems to me that he has made the best of a difficult job here. I am, perhaps, less sanguine than he about the possibilities for such correlations.

For the most part, I am in agreement with Bushnell's conclusions on extra-areal relationships towards the north. His linkage of the painted pottery from La Libertad and Guangala proper with the Nicoya style of Costa Rica indicates, as he says, an intimate cross-tie. This, indeed, argues for a relatively late date for the Guangala culture in which these painted styles occur. Nicoya is generally thought to have derived some of its principal design inspirations from Meso-American on a post-Classic level and, as such, is usually dated as later than A.D. 1000. This fits nicely with Bushnell's statement that the mould-made figurines of the Guangala culture and of La Tolita, both of which certainly have Middle American affinities, must post-date A.D. 900, an early date for the use of the mold in the Maya area. This may be so, but it should be remembered that the use of the mould for figurines in Peru is common in the Mochica culture which by all estimates (carbon 14 and otherwise) begins much earlier than this.

In spite of the facts that the styles of figurines and pottery of the Ecuadorian coast have definite Meso-American similarities, the possible rôle of Peru cannot yet be turned aside in any broad study of the archaeology of Ecuador. Bushnell sees little in the way of direct *stylistic* resemblances between his periods and those of Peru, and with this one has to agree. There are, nevertheless, some interesting parallels in ceramic *decorative techniques* and in their chronological successions. For example, the dark, monochrome, incised and punctated ware of the Pre-Guangala period has the same surface treatment as much of the simpler Chavín horizon pottery of Peru. I know of no exact duplications of motives, but there is a common geometrical simplicity in many of the incised designs (see Bushnell, fig. 3 and Larco Hoyle, 1941, figs. 84, 91, 92). Pre-Guangala is what the Chavín pottery complex might have been without the centralizing feline element of the Chavín style. Nor is the white-on-red pottery of the succeeding Guangala culture unlike the white-on-red pottery of coastal Peru which follows the Chavín horizon. The simple bowl form and the design arrangement around the rim (Bushnell, fig. 15, a) remind one of Peruvian materials (Willey, 1943, pl. 3, h-j). There is also the appearance of the negative painting technique on pottery, coming at about the same time as the white-on-red decoration, that offers a third major parallel between the Santa Elena sequence and Peru.

It is difficult to know just what to make of these parallels in ceramic technology. To me, their appearance in the same chronological order in both Ecuador and Peru seems more than coincidental. The concepts with which we are dealing are not styles, but they may be traditions partaking of a common history. I would suspect that the mechanisms of their spread were quite different from those producing stylistic similarity. A boatload of Costa Rican voyagers landing on the coast of Manabí or Guayas, as Bushnell hypothesizes, could have been the causative factor in the Guangala-Nicoya stylistic resemblance. On the other hand, the sequence parallelism in dark-fired ware with incisions, reddish ware with white paint, negative decoration, and even a return to sombre wares in the late periods (e.g. Manteño and Late Chimu) are probably attributable to other kinds of processes. These processes may have been those of a gradual drift of great, slow waves of ideas—waves which passed over and carried along many diverse styles so that all were subtly tinctured with the prevailing change and yet each continued self-confidently in its old channels. It is unlikely that diffusions of this sort will be of value as chronological horizon markers between areas except in the broadest most general way. As far as Ecuador is concerned we cannot yet tell if they were moving from the north

or south. I raise the point only to indicate that involvement with Peru seems likely even though this relationship appears to be of a different order than the more concrete linkages with Meso-America. GORDON R. WILLEY.

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THE DROVE ROADS OF SCOTLAND. *By* A. R. B. HALDANE. *Thomas Nelson and Sons Ltd.*, 1952. 25*s*.

This is one of the most important contributions to Scottish history that has appeared for many years. In the first place and above all, it has a new theme. The main topics of Scottish history—the controversies about the early Celtic period, the War of Independence, the guilt or innocence of Mary Stuart, the religious disputes of post-Reformation times, and the '15 and the '45—all these subjects have been handled and rehandled *ad nauseam*. But here is a subject of major importance in the historical, economic and social development of the Scottish people which has hitherto been completely ignored. It has now been dealt with in truly admirable fashion by Mr Haldane; and his book, besides providing fascinating reading, will require to be taken into account by every student of Scottish history and national life in the 18th and 19th centuries.

The book does itself somewhat less than justice by its title. It is far more than merely a study of the old droving roads, interesting and important as this topic certainly is. We are given a complete picture of the whole droving system:—the way in which the industry was organised; its economic basis, the credit facilities provided by the early banks, and the methods of payment; the actual transport arrangements of the cattle from the remotest corners of the Outer Islands to the great Tryst at Falkirk, and thence to the south; and the strange, picturesque but hand-to-mouth life led by the drovers themselves. Moreover the way in which the Scottish droving industry was linked up with the English cattle trade and the London market is brought out in a fascinating and truly surprising manner.

The main part of the book deals with the droving routes through the Scottish mountain system. This part of the work has been investigated with a thoroughness and an attention to local sources of information that deserve unstinted admiration. It is however unfortunate there is nowhere given a connected picture of the mountain system of the country and the way in which the passes dependent thereon conditioned the whole scheme of movement of the cattle. The theme of the droving roads might in fact have been presented with excellent effect as a study in reverse of the topographical history of Scotland. This history hinges upon the two great mountain systems known accurately to the early Celtic inhabitants as Drumalban and the Mounth. Recent study of the influence of this mountain system upon the history of Scotland has concentrated on the movements of armies, missionaries and caravans across Drumalban westwards and over the Mounth northwards from the early centre of the Scottish kingdom to the outlying provinces as these were successively absorbed. Mr Haldane's study might with great advantage have been designed to exhibit a reverse movement over the same

natural avenues. In this respect he has missed a golden thread which would have both bound together and illumined his narrative. As it is, one feels that his discussion of the roads is still haunted by the old erroneous conception of a Grampian mountain range—which indeed is conspicuously marked on the map at the end of the book. Incidentally this map would have been much improved had the contours been shown in more decided colouring.

In compiling his narrative, Mr Haldane has used an immense mass of documentary material, published and unpublished, and no praise can be too high for the thoroughness of his investigation and exegesis. He has also taken the pains and the physical toil to establish personal contacts with old drovers up and down the glens, and with those who can still tell tales handed down by their fathers of the droving life. It is well that he has done so ; for in another generation, or less, the whole of this body of traditional information would have been lost.

Mr Haldane's theme is an eminently picturesque one which lends itself to fine writing ; and he has certainly proved himself equal to the task. The high literary quality of his book must strike every reader. It is beautifully printed and very fully illustrated with well-chosen photographs and reproductions of old prints. The photographs can have no better commendation than the mere mention of the fact that they have been taken by Mr Robert Adam.

It is long since the present reviewer has read a more enjoyable book. It will be welcomed alike by the professed student of Scottish history and social economy, and by all lovers of the noble northern land with its mountains, its moorlands and its glens.

W. Douglas Simpson.

ENGLISH PREHISTORIC POTTERY. 28 *plates. Victoria and Albert Museum Small Picture Book, no.* 26. 1952. *Price* 1*s* 6*d.*

This extremely moderately priced picture-book gives an admirable series of photographs of 32 pots ranging from the Neolithic to the Belgic period and included in one of the Museum's circulating collections. The selection and the photography are excellent, and the plates form a most valuable set of illustrations for the student or teacher.

The brief preface, in justifying the restriction of the scope of the collection to English pottery, has a defeatist air arising from an assumption that all archaeological material in the north and west of Britain is intractably complex, and at best presenting insular eccentricities derived from Lowland Zone cultures. This view, which seems to be based on an uncritical application and misunderstanding of Fox's thesis of 1932, is unfortunately not uncommon, and gives a most misleading impression of the relationship of the British Isles to the Continent in prehistory. A few alterations in the content of the plates, and hardly any increase in their number, could have made the book representative of Britain as a whole, and included some very important and interesting material.

Stuart Piggott.